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THE
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PHARMACIST

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The Maryland
Pharmaceutical
Association

JANUARY 1975
VOL 51
NO 1

The Emerging Role of The Pharmacist As A Health Care Professional

The Poison Pen — Mr. Yuk Means No

Institutional Pharmacy — Pharmacy Audits

April 10 — MPhA-APhA Workshop on The Pharmacist's Role in Patient Care in the Long-Term Care Facility Monitoring Drug Therapy.
Holiday Inn — Airport

April 17 — MPhA House of Delegates and Spring Regional Meeting.
Holiday Inn — Frederick

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BALTIMORE MARYLAND 21201
TELEPHONE 301/727-0746

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editorial

A New Look

With this issue *The Maryland Pharmacist* assumes a new fresh look—a look of dynamism and of progress. An original, unique logo designed by an award winning publication art director is carried through from cover design to the inside pages and journal departments. A new, more readable, type face has also been adopted. Thus we inaugurate the 51st volume of the official publication of the Maryland Pharmaceutical Association which was launched in October 1925 with Dr. Robert L. Swain, a distinguished Maryland pharmacist who later became editor of *Drug Topics,* as the first editor.

The Maryland Pharmacist has gained international as well as national recognition, as evidenced by requests for reprints. Over the years many original papers in many areas of the pharmaceutical sciences, professional practice, pharmaceutical socio-economics, and history of pharmacy have been published. The growing field of institutional pharmacy has been recognized with the establishment of a journal section devoted to this important specialty of pharmacy practice.

During the coming months, special features commemorating the completion of fifty years of contribution to the profession of pharmacy through providing a vital informational organ and an essential opportunity for publication of papers will culminate in a special 50th Anniversary Issue of *The Maryland Pharmacist* in October.

The 50th Anniversary Issue will include unique historical material, valuable reference information not available elsewhere and a membership directory. It will mark an important milestone in the over nine decades of service to the profession of pharmacy and to public health by the Maryland Pharmaceutical Association—the state professional society.

We trust all pharmacists in Maryland who wish to be identified with pharmacy—a vital profession that is an organic element of comprehensive and effective health care—will wish to be included in the special October issue.

—Nathan I. Gruz

calendar

March 20 (Thursday)—Fifteenth Annual Robert L. Swain Pharmacy Seminar — "Patient Medication Record Systems", Quality Inn, York Road, Baltimore, Maryland.

April 10—MPhA-APhA Workshop on The Pharmacist's Role in Patient Care in the Long-Term Care Facility Monitoring Drug Therapy. Holiday Inn—Airport.

April 17—MPhA House of Delegates and Spring Regional Meeting. Holiday Inn—Frederick.

April 19-24—American Pharmaceutical Association Annual Convention, San Francisco Hilton, San Francisco, California.

April 30 - May 2—Chirurgical Faculty of the State of Maryland (Med Chi) Annual Meeting.

May 27 (Tuesday)—University of Maryland School of Pharmacy Alumni Association Annual Alumni Banquet, Eudowood Gardens.

June 6-8—Tenth Annual Hospital Pharmacy Seminar, Maryland Society of Hospital Pharmacists, Sheraton Fontainbleau, Ocean City, Maryland.

June 25-26—MPhA Convention, The Hilton Inn —Pikesville.

July 14-22—MPhA London Tour and Seminar

Mid-January 1976—MPhA Acapulco-Mexico City Tour.

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board of trustees

Nathan I. Gruz, *Executive Director*

November 7, 1974

- Received communication from legal counsel regarding closing of pharmacy service area when remainder of a pharmacy is open to the public.

- Received letter from the National Pharmacy Insurance Council (NPIC) regarding first National Seminar of Third Party Programs and Pharmacy Services.

- Received request from the USP for nominees to the Committee on Revision.

- Received copy of letter from APhA to HEW objecting to proposed regulations placing non-physician health practitioners under the supervision of physicians in HMO's.

- Received report from the combined Committee on Student Aid and Scholarships of the Alumni Association and MPhA regarding award of four scholarships to College Park of which one will be funded by the MPhA John F. Wannenwetsch Scholarship Fund. There will also be two scholarships to UMBC.

- Approved President's report. Two new Board members, Samuel Lichter and Rudolph Winternitz, were welcomed. The President reported on his meeting with Dr. William Apple at APhA regarding affiliation. Other meetings were with Employee Pharmacists' Committee, Prescription Drugs Inc., and with Director of Comprehensive Planning Agency. The President also noted attendance at meetings of the Committee on Ancillary Personnel, meeting with State Medicaid officials and Drug Evaluation Committee.

- Approved Treasurer's report.

- The Executive Director reported on activities including attendance at MSHP meeting in Annapolis addressed by Delegate Aris Allen, M.D.; also the Balassone Memorial Lecture Committee; Board of Pharmacy meeting; APhA Drug Monitoring Workshop in Richmond; inspection of possible convention sites; conference with Dean Kinnard and Dr. Shangraw on Tri-partite Committee; meeting with Medicaid officials; Drug Evaluation Committee; BMPA activities; conference with city officials on drugs and mental health program; and arrangements for Diabetes Detection Week. The Executive Director addressed the newly formed Frederick County Pharmaceutical Association and engaged in legislative and political activities including testimonial affairs.

- Approved Membership Committee report.

- Authorized membership promotion campaign allowing 50% membership fee for new members in 1975.

- Received report on the Fall Regional and House of Delegates Meeting.

- Received status report on convention sites for 1975 convention and on the Hawaii trip which was sold out.

- Approved tentatively a proposal for workshop on monitoring drug therapy and referred it to the Swain Seminar Committee.

- Approved Medicaid Committee report noting efforts in obtaining an increase in the pharmacy fee. Other problems were discussed with State officials. Discussed proposed state regulations for reimbursement of unit dose medication. A special subcommittee was appointed to look into this matter. Approved Legislative Committee report outlining priorities: 1) mandatory Continuing Education; 2) State Medicare program; 3) amendment to drug product selection law to make it more operative; 4) placing all exempt narcotics on prescription; 5) repeal of law requiring prescriptions to be filled within thirty days from date of prescribing except for controlled dangerous substances; 6) seek Board of Pharmacy regulation on transfer of prescription copies between pharmacies; 7) referred the matter of technician ratios to the Tri-partite Committee; 8) referred the matter of pharmacist in charge to the Employee Pharmacists' Committee.

- Voted to recommend Executive Director Gruz for the Honored Alumnus Award of the University of Maryland School of Pharmacy Alumni Association.

- Received report on PHARMPAC activities. All pharmacists were urged to support this important activity.

- Recommended that a resolution presented by the President on safety vials be presented to the House of Delegates.

- Approved resolution specifying that the responsibility for providing information in a pharmacy to the public concerning drugs' and medicines' therapeutic values and uses be that of the pharmacist or extern under supervision of the pharmacist.

- Referred the matter of multiple prescription forms (Polyscripts) to the Professional Affairs Committee.

New Members

The following is a list of the members approved at the November 7, 1974 meeting of the Board of Trustees of the Maryland Pharmaceutical Association:

Harland D. Holtham, Greenbelt, People's Drug Stores
Marshall Montgomery, Bluemont, Va., Sandoz Laboratories
Dolores Pledger, Derwood, Md., People's Drug Stores
Allan Sapperstein, Cockeysville, Cockeysville Pharmacy
Sidney Shochet, Chevy Chase
S. K. Singal, Oxon Hill, Prince Georges General Hospital

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Contributed Paper

The Emerging Role of The Pharmacist As A Health Care Professional

by Samuel L. Fox, M.D.*

The invitation to give the keynote address of the 1974-75 fall Honors Convocation of the School of Pharmacy evoked a prompt acceptance on my part. As many of you know, I am a proud alumnus of this School, holding both the Ph.G. and B.S. in Pharmacy degrees. I have retained an active interest in Pharmacy throughout my long career as a physician and teacher. In fact, my registration as a pharmacist in this State has been maintained and is currently valid.

My topic is a much abused subject of discussion these days. I hope I may bring a ray of light to the subject, for the emerging role of the pharmacist in the developing health delivery system of tomorrow is reasonably clear, I believe.

The December 31, 1967 edition of *The New York Times* carried a headline article on the subject. Dr. James L. Goddard, then U.S. Commissioner of the Food and Drug Administration, was quoted as saying:

> "I would say that the corner drugstore should be closed down, although I know that's a radical statement."

Dr. Goddard saw the vending machine, stacked by a high school graduate clerk-technician, as replacing the pharmacist in the dispensing of drugs. Such sentiments by the harbingers of doom for Pharmacy as a profession were commonplace a decade ago, but now a high official of the Federal government had dared to take up the cudgels of the foray.

While this attitude of doom and gloom was pervading the mind and soul of the practitioner pharmacist, some officials of both governmental and private agencies were espousing an equally unrealistic role for the pharmacist of the future. The editor of a pharmacy trade journal began compounding the felony from the comfort and security of his swivel chair and typewriter by publishing such drivel as to suppose that the physician's role would soon be limited to making a diagnosis and all therapy would be left to the pharmacist. This erroneous concept was based on the *quid pro quo* that each symptom required a symptom-abating drug, an archaic philosophy to say the least.

When we consider that less than 30% of all patients seeking medical care have clear-cut, identifiable organic disease (much of which requires surgery), it becomes obvious that the vast majority of patients require something more than two automatons: the physician feeding symptoms, signs and laboratory reports into a computer that will digest and synthesize a diagnosis to be delivered promptly as a computer print-out to a pharmacist, who will serve as a human data bank spewing forth stored information about drugs and their actions on demand. Yes, such impersonal medical care will work—for a small number of patients at any given time. But it will wreak havoc in the case of most patients seeking health care—the more than 70% of the patients who have functional problems, or who seek assurance against the presence of disease for one reason or another.

Somewhere between the fantasies of these two extremes, the pharmacist will find his rightful place as a member of the health care delivery system which is evolving. Admittedly, the cauldron of ideas, proposals and counterproposals for national health insurance is boiling over at this time. With a new Congress in session in January, less haste and greater consideration will be given anew to the many proposals. A national health insurance plan is a certainty in 1975. There is a Chinese proverb which goes something like this: "To prognosticate is always dangerous ...especially as to the future." In spite of this admonition, I believe it entirely safe to expect a pre-paid health insurance plan with special emphasis on catastrophic illness. The mode of delivery of such service for the foreseeable

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*Presented as the keynote address at the 1974-75 Fall Honors Convocation of the University of Maryland School of Pharmacy, October 16, 1974. Dr. Fox is on the Faculty of the Schools of Medicine, Pharmacy and Dentistry. He is an ophthalmologist and a graduate of the University of Maryland School of Pharmacy. He served as President of the School of Pharmacy Alumni Foundation and is now Medical Director of the Drug Abuse Administration, Maryland State Department of Health and Mental Hygiene.

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future will be by fee-for-service purchase of care, but an increasing effort will be made to develop group practitioners (HMO's). The American plan will not likely be patterned after the English plan for two reasons: first, our people have always had a more independent spirit than the English and, therefore, Americans will not tolerate the lack of freedom of choice which the English have had imposed upon them. Secondly, the third-rate system prevalent in England today is bankrupt, both professionally and fiscally, and the docile and long-suffering English people are beginning to rebel at the lack of adequate facilities for in-patient treatment, especially for the young and the elderly. Congress is fully aware of these shortcomings in the English system. The plan in Holland is older than that of England and is more successful. However, it is extremely costly but accepted in a totally socialistic country.

No, the pharmacist is not doomed to extinction. And neither is the physician. Computers cannot replace them. The computer will complement their services and heighten their value and increase their ability to serve more people at a higher level of efficiency and proficiency. The pharmacist and physician will have to work as part of the newly-conceived health service team. This will include nurses, social workers, psychologists, psychiatrists and many other para-medical personnel. The evolving role of the nurse practitioner, especially in the field of preventive medicine, and of the physician's assistant in the delivery of routine health care, especially to the chronically ill, will add further para-professionals to the health team. A proper place in the sun must be found for each, and much fear of encroachment by the traditional practitioners will have to be overcome. We shall need a rare vision and great resiliency to enable us to meet the challenges of tomorrow.

I am convinced that the "neighborhood pharmacy" is not doomed to oblivion. I have long held that the character of such enterprises must change from the general merchandise retail store to that of a professional pharmacy, perhaps with a greater array of services than the old apothecary shop but certainly geared to serving the patient of the private physician practitioner who also elects to continue in solo practice or group practice in a neighborhood.

Others of you will find your rightful place within the concept of the Health Maintenance Organizations (HMO's) where pharmaceutical services will be dispensed in the physical structure of the facility. Still others will go on to receive further advanced training in the newly-established Pharm. D. programs to qualify for service within the hospital center. Here you will find your greatest challenges, perhaps, but obviously not all pharmacists will be trained for this function nor are all suited to it. Some of you will even go on for more advanced training and obtain the Ph.D. degree, and will then devote your lives to research or teaching, There will be a place in the sun for all, I am confident.

The expanse of science knowledge has become so vast that no one practitioner can do the job alone any longer. The team concept must be developed and must be made to work. Your role as a part of this health care team will require that you gain a broader education than ever before. You cannot limit yourself to the physical sciences, or even to the biological sciences, but you must have a broad exposure to the social sciences as well.

The population growth, though somewhat slowed at the moment, will continue, especially at both ends of the spectrum: there will be more infants and children and more senior citizens, both of whom require more medical care than those in the middle range of life. Preventive medicine has barely scratched the surface. Yes, we have learned to immunize children so that they live into middle life and beyond; but we really haven't learned how to prolong significantly the life of adults. Heart disease, cancer and other chronic debilitating diseases still plague our system of health care and make demands upon it which are beyond our physical, professional and fiscal capacities to satisfy. You are living in that era which must develop solutions to these problems.

You will need to work closely not only with the physician and the patient, but also with the other para-medical team members, in bringing about social as well as medical changes for the benefit of those entrusted to your care. Yours will be an expanding role, utilizing your special talents and knowledge. When 20% of all patients admitted to the medical service of the Johns Hopkins Hospital require treatment for adverse drug reactions, it is quite clear that the services of the pharmacist are sorely needed at every quarter. This will be your new role: to assist in the selection of the proper drugs for each patient, serving as a consultant to the physician. The monitoring of drugs being administered simultaneously to protect against the peril of adverse interaction will also be your responsibility. Time will bring expansion of your services as your qualifications broaden.

Your greatest needs for the future will be two: continuing education to keep you abreast of the times; and the development of that priceless ingredient in your lives, professional integrity. Sir George Pickering once said:

> "Education is terminated by only one event — death.
> Postgraduate education enables those who wish to go on learning to do so,
> It cannot raise the dead."

Without continuing education you will soon be numbered among the intellectually dead.

It was Hakeem, the Wise One, of the ancient city of

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*Based on survey published in
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Chains	Purepac	+275.0%
	Mc Kesson	+27.1
	Upjohn	−11.5
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	Upjohn	+19.0
	Mc Kesson	−5.2

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Bagdad, who advised a young protege that:

> "A thing that is bought or sold has no value unless it contains that which cannot be bought or sold. Look for the Priceless Ingredient," advised Hakeem.
>
> "But what is this Priceless Ingredient?" asked the young man. The Wise One replied: "My son, the Priceless Ingredient of every product in the marketplace is the Honor and the Integrity of its maker. Consider his name before you buy."

And so will you be judged by whether your name carries the Priceless Ingredient in your professional character. Nothing less is acceptable in the health care field.

I would like to turn now to those who are being honored today for your various achievements. We look to you as the Leaders of Pharmacy for tomorrow. An aging Indian chief felt the need to select his successor from among his three sons. He called them together and told them of his plan. He instructed them to travel far and wide beyond the Indian village to explore the outside world. He asked that they make careful note of their findings and their impressions. The first son to return did so after only a day's travel. He reported that he walked far beyond the visible plains until he came to a dense forest. Seeing that he was surrounded by trees, he felt this was the total expanse of the universe, with nothing beyond the forest, so he returned home. The second son to return was gone 3 days. He reported that he penetrated the dense forest and travelled for more than a day before he again came to a fertile plain. But beyond the plain were mountains. He attempted to cross them but found them too much of a challenge for him. He decided the mountains perimetered the earth. The third son was gone more than a week, and concern had begun to set in when he suddenly re-appeared. He reported that he did climb the mountains and on the other side was the most beautiful scene: white clouds amidst a sea-blue sky, a terrain such as no one in the tribe had ever witnessed, blue lakes and heavenly fragrance amidst lush, verdant vegetation, and a distant sea in the far beyond. He reported that as he viewed this new world, he had visions of great accomplishments yet to come, of dreams as yet unfulfilled. The chief named the third son as his successor . . . for he had the Vision and the Dream for greater and bigger things ahead.

And so it is with you who are being recognized this afternoon for qualities of leadership and for accomplishments beyond the ordinary. The Vision which you have within you must ever be nurtured so that you may remain in the vanguard of the leadership of Pharmacy.

And yet, I would like to say a word of praise for those of you in the assemblage who do not receive such accolades today. The words of the 20th century Lebanese symbolist poet, Kahlil Gibran, come to mind:

"You are good when you are one with yourself.
Yet when you are not one with yourself you are not evil.
For a divided house is not a den of thieves; it is only a divided house.
And a ship without a rudder may wander aimlessly among perilous isles yet sink not to the bottom.

"You are good when you strive to give of yourself.
Yet you are not evil when you seek gain for yourself.
For when you strive for gain you are but a root that clings to the earth and sucks at her breast.
Surely the fruit cannot say to the root, 'Be like me, ripe and full and ever giving of your abundance'.
For the fruit, giving is a need, as receiving is a need to the root.

You are good when you walk to your goal firmly and with bold steps.
Yet you are not evil when you go thither limping.
Even those that limp go not backward.

You are good in countless ways and you are not evil when you are not good.
In your longing for your better self lies your goodness; and that longing is in all of you."

Yes, those of you being honored at this Convocation have walked to your goal firmly and with bold steps. Yet, those of you who have only limped along, have not gone backwards.

Upjohn/Karolinska Team Develops Synthesis of PGD_2, A Promising Antithrombotic

A shortcut to production of prostaglandin D_2 (PGD_2), together with evidence of its antithrombotic activity, has been reported by scientists of the Karolinska Institutet, Stockholm, and The Upjohn Company.

"We have shown that PGD_2 is a potent, long-acting inhibitor of blood platelet aggregation, with less side effects on the cardiovascular system than other prostaglandins with this property. Our findings suggest possible use of this experimental compound someday as an oral or intravenous antithrobotic agent," the researchers said.

Aggregation of blood platelets is a key event in thrombus formation. Discovery of an agent to inhibit platelet aggregation could be useful in treating thrombic conditions.

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Indications: For decongestion of the nasal mucosa. **Contraindications**: Narrow-angle glaucoma. Concurrent MAO inhibitor therapy. Tricyclic antidepressant therapy. Hypersensitivity to any component. Sensitivity to even small doses of adrenergic substances as manifested by sleeplessness, dizziness, lightheadedness, weakness, tremulousness, or cardiac arrhythmias. **Warnings**: Systemic effects may occur if given in excess. They are most likely to occur in infants and the elderly. Use very cautiously in patients with hypertension, heart disease, angina, hyperthyroidism and advanced arteriosclerotic conditions. Overdosage may produce profound CNS depression in children, possibly requiring intensive supportive treatment. *Usage in Pregnancy*: Safe use of Otrivin, brand of xylometazoline hydrochloride has not been established with respect to fetal development. It should not be used in women of childbearing potential or during early pregnancy unless the potential benefits outweigh the possible hazards. **Precautions**: Use sparingly in all patients, particularly infants, children and the elderly. **Adverse Reactions**: Burning, stinging, dryness of the nasal mucosa, sneezing, palpitations, tachycardia, cardiac arrhythmias, increase in blood pressure, headache, lightheadedness, nervousness, insomnia, blurred vision, drowsiness, CNS depression. Prolonged or excessive use may cause rebound congestion. (B) 6602 (6/74) **For complete details, including dosage, please see full prescribing information.**

GEIGY Pharmaceuticals
Division of CIBA-GEIGY Corporation
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INCLUDES THIS OUTSTANDING PACKAGE.

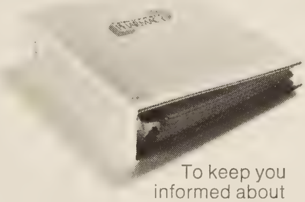
As the originator and developer of Librium (chlordiazepoxide HCl), Roche has accumulated through the years a vast amount of experience and knowledge with this widely accepted, highly respected anti-anxiety agent. *And you have ready access to this storehouse of technical information.*

Medical Emergency Line

Area Code 201
235-2355

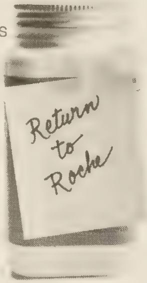
For questions requiring an immediate answer, our Medical Emergency Line (201-235-2355) provides a direct, round-the-clock telephone service for specific questions on Librium (chlordiazepoxide HCl) and other Roche products. In addition, our information specialists are prepared to answer inquiries of lesser urgency by mail. Through your Roche representative, you can also obtain a variety of informative materials, *e.g.*, scientific brochures, reprints and bibliographies.

The New Environment of Pharmacy



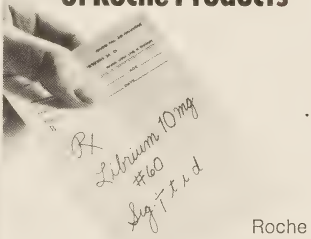
To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy*, will keep you continuously informed on a wide range of pertinent subjects—new governmental regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, N.J. 07110.

Liberal Return Goods Policy



Roche understands the difficulties that a busy pharmacist has in maintaining a proper inventory. Prescription demand for Librium (chlordiazepoxide HCl) tends to minimize any expiration problems for this product. For other Roche products that may be outdated or discontinued, the Roche return-goods policy expedites replacement and enables you to keep your stock up to date.

No Sampling of Roche Products



Roche—the *first* pharmaceutical house to discontinue routine sampling to physicians—believes that the dispensing of drugs by the pharmacist contributes to better control of drug usage.

And the Roche commitment to product excellence is your assurance of uniformly high quality.

Librium®
(chlordiazepoxide HCl)
5 mg, 10 mg, 25 mg capsules

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

ROCHE

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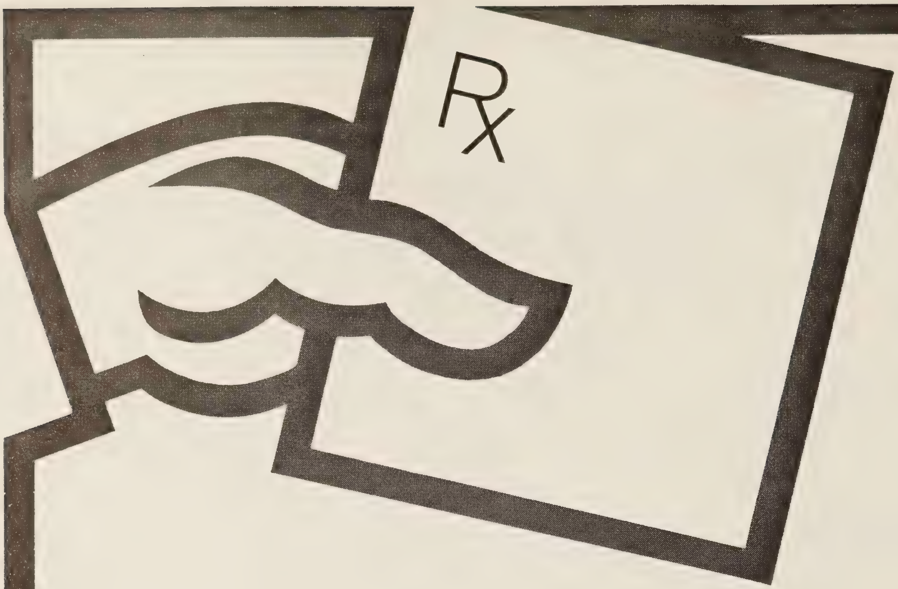

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U. S. Pharmacopeia XIX Published

USP XIX, the completely revised and enlarged new Pharmacopeia, was published in December, and will become official as of July 1, 1975.

More drugs and dosage forms are recognized in this, the Nineteenth Revision, than have been listed before in any modern USP. In continuing to provide standards and tests for demonstrating the identity, strength, quality, and purity of those drugs representing the best in current medical practice and teaching, USP XIX breaks new medical and pharmaceutical ground with the comprehensive array of therapeutic and diagnostic categories covered in the new edition.

USP XIX contains almost 1300 monograms, 16% more than appeared in the preceding edition.

Expiration Dating and Other Changes in General Notices

The General Notices, which apply to the USP standards, tests, assays, and other specifications, are revised considerably, particularly with respect to containers, labeling, and abbreviations for metric units. Definitions are introduced for single-unit, multiple-unit, and unit-dose containers.

A significant change is the provision that in the absence of a specific requirement in the individual monograph for a dosage form, the label of such article shall bear an expiration date assigned by the manufacturer for the particular formulation and package of the article.

Dispensing Information

The USP XIX monographs on therapeutic articles include more extensive information about the usual pediatric dose. Also, except for articles intended for parenteral use, the monographs include a new section on dispensing information that serves as a basic reminder or general guide to the pharmacist, who may vary or omit it in accordance with the best interests of the patient or the particular circumstances involved.

New Format

The most striking new physical aspect of the latest Pharmacopeia is its larger trim size, 8¼" x 11¼". The larger page size and revised two-column format accommodate a considerable increase in the amount of USP text and result in substantial economy of space. The USP XIX format is designed for optimal readability and for ease of reference, and innovations in the arrangement of text facilitate the distinctions between compendial requirements and those portions of the text that are primarily informational in nature and intent and not part of the requirements.

Responding to an often-expressed preference by users of the Pharmacopeia, a division of the monographs section is made whereby monographs on drug substances and dosage forms are given first, followed by the group of monographs on articles known as pharmaceutic ingredients. Alphabetic cross-references are made between the two sections of monographs for ease of reference. Furthermore, the format within a given monograph is modified so as to present the primarily informational portions of the text first, followed by the text comprising requirements, the latter section of the monograph being introduced by a boldface double-arrow symbol. Thus, the informational portions preceding the double-arrow symbol generally include those designated as category; usual dose; usual dose range; usual pediatric dose; sizes available; dispensing information; description; and solubility. This distinctive separation of the informational from the mandatory requirement text serves two purposes, namely the convenient classification of the types of information of most concern to the physician and the pharmacist in one location in the monograph, and the designation of all text following the double-arrow symbol as requirements that must be met by the article.

Just as the informational is separated from the requirements text among the USP XIX monographs, so are the general chapters segregated. Thus, the general chapters pertaining to Pharmacopeial requirements are grouped together, and are followed by the group of general chapters that are primarily for purposes of information. An example from the latter group is the new chapter on Automated Methods of Analysis, which at this stage recognizes the place of automated methods in modern analytical techniques but stops short of specifying official procedures. The USP XIX General Notices do, however, allow for use of automated procedures employing the same basic chemistry as the official methods given in the monographs, provided the results obtained thereby are of equivalent accuracy.

Significant Changes in Monographs

Among the significant improvements in the USP tests and standards is the replacement of the gravimetric assay for morphine in Opium by a more accurate ultraviolet spectrophotometric determination after isolation of purified morphine by means of column chromatography. Spectrophotometric and chromatographic methods are used extensively in USP XIX monographs, both in identity and purity tests and in assays. High-performance liquid chromatography, a recently developed technique, is employed in several monographs on corticoids and other steroids, both to measure the quantity of the active ingredient and to detect the presence of closely related impurities. Atomic absorption spectroscopy and X-ray diffraction analysis are among the techniques used for the first time in USP tests.

Advances Reflected in Revised General Chapters

The chapters on Chromatography and Spectrophotometry have been revised extensively to describe the newer analytical procedures. Also, a new section has been added to the chapter on Injections, setting forth standards and tests for particulate matter in large-volume injections intended for single-dose infusion. Attention is given the subject of Constituted Solutions, i.e., solutions prepared from sterile dry solids or liquid concentrates at the time of use by the health-care practitioner, in the chapter on Injections.

Three new General Tests chapters are included, namely, those on Hydroxypropoxy Determination, Containers—Permeation, and X-ray Diffraction. Five new general information chapters are added, including those on Automated Methods of Analysis, Legal Recognition of The United States Pharmacopeia, and Thermal Analysis, and two chapters written especially for practicing pharmacists and physicians on Controlled Substances Act Regulations and Stability Considerations in Dispensing Practice.

Ordering Information for USP XIX and Supplements

USP XIX comprises 874 pages; its printed dust jacket bears an order form on the front flap for the First Supplement and a copy of the current USP Guide To Select Drugs, both of which will be mailed at no further charge to the purchaser.

The First Supplement is in preparation, and is scheduled for publication in the first quarter of 1975, to become official simultaneously with USP XIX and NF XIV, on July 1, 1975.

The 1975 edition of the USP Guide To Select Drugs is essentially a brand-name index to the articles recognized in USP XIX, and its First Supplement.

Pursuant to the acquisition by the USP Convention, Inc., of the National Formulary immediately following publication of NF XIV, the first NF XIV Supplement will be published from USP headquarters, and it is in preparation with a view to its becoming official simultaneously with USP XIX and NF XIV.

The Maryland Pharmaceutical Association has been designated as a distributor for USP XIX. For immediate attention, orders for USP XIX at $25 per copy postpaid should be mailed to MPhA, 650 W. Lombard Street, Baltimore, Md. 21201.

maryland board
of pharmacy

Pharmacy Changes

The following are the pharmacy changes for the month of December:

New Pharmacies

Giant Pharmacy #238, J. B. Danzansky, President; 551 Governor Ritchie Highway, Severna Park, Maryland 21146.

Nationwide Pharmacy Centers, J. R. Newcomb, W. A. Martin, S. Capetta; 3450 Fort Meade Road, Laurel, Maryland 20810.

Deist Pharmacy, Inc., Freeman P. Deist, President; 46 Main Street, Lonaconing, Maryland 21539.

Dart Drug Corporation, Gaithersburg, Herbert H. Haft, President; 602 Quince Orchard Road, Gaithersburg, Maryland 20760.

Changes of Ownership, Address, Etc.

Princess Anne Pharmacy, Inc., Clyde G. Johnson, President (Change of corporation); Somerset Avenue & Prince William Street, Princess Anne, Maryland 21853.

Levay Riverside Pharmacy, Frank F. Levay, President (Change of corporation); 1458 Riverside Avenue, Baltimore, Maryland 21230.

Church Hospital Corporation-Pharmacy, T. G. Whedbee, Jr., President (Change of corporation); 100 North Broadway, Baltimore, Maryland 21230.

No Longer Operating As Pharmacies

Federal Pharmacy, Wesley N. Shelton, President; 1601 North Wolfe Street, Baltimore, Maryland 21213.

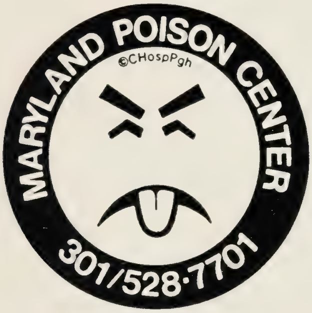
Edmondson Pharmacy, David D. Barron, President; 2501 Edmondson Avenue, Baltimore, Maryland 21223.

Perry Hall Apothecary, Gabriel Contrino, President; 9660 Belair Road, Baltimore, Maryland 21236.

the poison pen

MR. YUK MEANS NO

By GARY M. ODERDA, Pharm. D.



A new poison prevention symbol developed by the Pittsburgh Poison Center has recently been adopted for use by the Maryland Poison Information Center. The impetus to develop Mr. Yuk came from the apparent lack of effectiveness of the skull and crossbones. Application of the skull and crossbones in a manner that made children think of pirates, fun and excitement had destroyed its value as a warning symbol. This was especially true in the Pittsburgh area since the Pittsburgh Pirates baseball team uses the skull and crossbones as their team symbol.

A number of symbols were tested using a group of preschool age children as subjects. The symbols included the skull and crossbones, the orange happy face and several variations of the happy face. Each symbol was placed on an identical plastic bottle. The bottle with the green scowling face with a protruding tongue shown above proved to be the one children were least likely to play with. The symbol was named Mr. Yuk after one child refused to sample a bottle marked with that product because it looked "yukky."

The symbol is designed as a self adhesive peel-off label that is to be placed on all potentially toxic agents in the home. As an aid to the parent to help him identify which agents require a Mr. Yuk sticker, a list of dangerous products is printed on the back of each sheet of stickers. Television spots will be shown on Maryland television stations that will educate parents to use these stickers on products in their home. As unattractive as the sticker is it alone will not deter poisoning. It is imperative that youngsters be taught that Mr. Yuk means NO. An additional animated television spot will be shown during children's programs that will introduce Mr. Yuk to children and teach them not to touch products containing the Yuk symbol. The Mr. Yuk symbol contains an additional important piece of information—the name and phone number of the poison center. Please note that two versions of the sticker are being used in Maryland. The one with our local number, (301) 528-7701 will be distributed in the Baltimore Metropolitan area and the sticker with our toll-free number 800-492-2414 will be distributed in areas of the state where calling Baltimore is a toll-call.

This program will hopefully result in a decrease in the number of childhood poisonings and will increase the public's awareness as to the existence and function of the Poison Center. Poison Prevention week is here again and now it is time to increase your poison prevention efforts. Those of you who work in community pharmacies will again this year receive supplies to hand out. If you have young children is your home poison proof? Is your pharmacy poison proof? Keep potentially dangerous agents out of the reach of children. Syrup of Ipecac is commonly used in poisoning emergencies. Much time can be saved if this is available in the home. Display Syrup of Ipecac conspicuously and recommend it to families with young children. If you would like to obtain a sheet of Mr. Yuk stickers please send a stamped self-addressed envelope to Poison Prevention Inc.

One sheet of stickers is distributed free of charge to anyone requesting them. Since Poison Prevention Inc. is a non-profit organization, donations to help defray printing costs are appreciated. Information for obtaining large numbers of sheets of stickers may also be obtained by writing to the address below.

POISON
Randallstown,
Maryland 21133

institutional pharmacy MP

PHARMACY AUDIT

by

PETER P. LAMY, PH.D.
Professor of Pharmacy and
Director, Institutional Pharmacy Programs
University of Maryland Hospital / School of Pharmacy

Introduction

The traditional health care delivery system has, over the years, evolved with little deliberate planning, growing most often without benefit of any conscious design. The hospital is the principal component of the health care system, both in terms of cost and jobs.

In general, the system of health care delivery in the hospital, as well as outside the hospital, has remained relatively unchanged, oblivious to the need for new forms of organization equal to the task of applying new knowledge and technology.

One aspect of health care delivery, particularly in the hospital, that has changed is the incessant growth of specialization. The system has become highly sophisticated, requiring the precise and costly teamwork of specialists, operating in expensively equipped facilities. This, in turn, has probably increased the quality but reduced the quantity of service a department delivers. Thus, unless the organization of the system can be improved, the output of the system will become less and less satisfactory, even though there may be massive increases in cost and numbers of health care personnel.

Coupled with these problems faced by the entire health care industry in general, and the hospital, in particular, are rising public expectations for improvements in the quality of health care. The Patient's Bill of Rights implies that the right to care is the right to quality care.

Evaluation of Services

To assure quality care, there must be a continuous evaluation of the services delivered. Undoubtedly, the question is no longer whether there will, indeed, be intervention in health services to assure quality but who will intervene and what methods will be used. Some evaluative procedures are already in effect, mandated by such programs as Medicare and Medicaid. With enactment of PL 92-603 in 1972, the Professional Standards Review Organizations were established.

All of the standards in the Accreditation Manual for Hospitals are directed toward the quality of patient care given and the welfare and safety of the patient. The JCAH Board of Commissioners approved the following statement on December 8, 1973:

> "The Board considers the quality of patient care to be the central purpose of its entire accreditation process. It has been generally agreed that the enhancement and protection of quality is a function which is primarily a responsibility of the medical staff with respect to medical care and supportive medical services. In the hospital accreditation standards, therefore, it is the expressed policy of the Board that adequate performance of this function shall be a substantial factor in the accreditation status of the hospital."

The JCAH in 1974, in making its accreditation decisions, will take into consideration evidence that hospitals are at least initiating processes aimed at evaluating the quality of care on a systematic, objective, and clinically and professionally sound basis. In its survey in 1975, the JCAH will expect to find substantial performance of this activity.

The Audit

There are three recognized purposes to an audit: a) to support good service by identifying efficacious and efficient elements, b) to indicate areas in need of improvement, and c) to provide ongoing education to the practitioner.

In the language of a systems analyst, the traditional health care system has an input (the patient), a processing unit of discrete resources (services rendered) and the patient outcome.

It is difficult to formulate the contents and expected outcomes of services. Medicine, in the past, has used specific health problems as tracers to evaluate a system. It is probably impossible to measure strengths and weaknesses of any process without knowing its outcome. This is particularly true of Pharmacy services. However, as patients often judge their experience less from the technical quality of the particular service received than from fulfillment of their needs for reassurance, comfort, personal dignity and awareness of the services given, it might be possible that Pharmacy could perform what is referred to as a sensitivity analysis, concentrating on a few key factors. In the ambulatory area, that could be the refill habits of patients, compliance, understanding of instructions, etc. To initiate a meaningful audit of pharmaceutical services, it is most likely best to begin with structural factors which can be audited. To approach an audit, the following questions, not meant to be inclusive, would have to be answered:

a. Statement of objectives of the service
b. Standards to define the quality of the service
c. Data on the service that can be compared to standards
d. Careful attention to measurement units
e. Assessment of the reliability of the analysis
f. Consideration of the cost of the method (s)
g. A plan for integration of the evaluation into the total organization

Process variables that could be audited might include:

a. Personnel (number, type, training and motivation)
b. Facilities (number, type, accreditation, standards)
c. Equipment
d. Organization (Co-ordination, continuity, accessibility, appropriateness)
e. Information systems
f. Records
g. Volume of patients served

For example, thoroughness could be measured from completeness of the data and from progress, among other parameters. Efficiency could be assessed by determining the time taken for a particular process. It can also be reflected in the way in which certain records are organized and kept up to date.

Audit in specific pharmacy areas should probably be coordinated with information on occupancy rates, level of illness, staffing, etc.

If "tracers" are selected, they must be discrete, must shed light on how a particular part of the system performs, and the tracer methodology should include the manner in which tracers were selected and combined, specifications of criteria or standards, and concurrent assessment of the health professional involved in the process.

INFORMATION NEEDED:

The ability of the department to meet its audit responsibility depends on the extent to which the department possesses information from which determinations can be made about program operation and effectiveness. These data should reflect distributional and performance aspects of the system.

The reporting system should be simple to understand and to complete. It should minimize paper work and contribute to the efficiency of the operation. It should lend itself to some degree of standardization and should not be simply an extra piece of paper that the system demands for some mysterious purpose. Finally, the reporting system must relate in some fashion to the feedback of information about the operation of the system. The problem is how much and what kind of information is needed for the proper rendering of audit, how the information is to be collected, who is responsible for what in the collection system, and how to make the information available in the most useful manner. Undoubtedly, only that information which is needed should be collected on a routine basis, and all other information not directly required to operate and evaluate the program should be obtained through special studies.

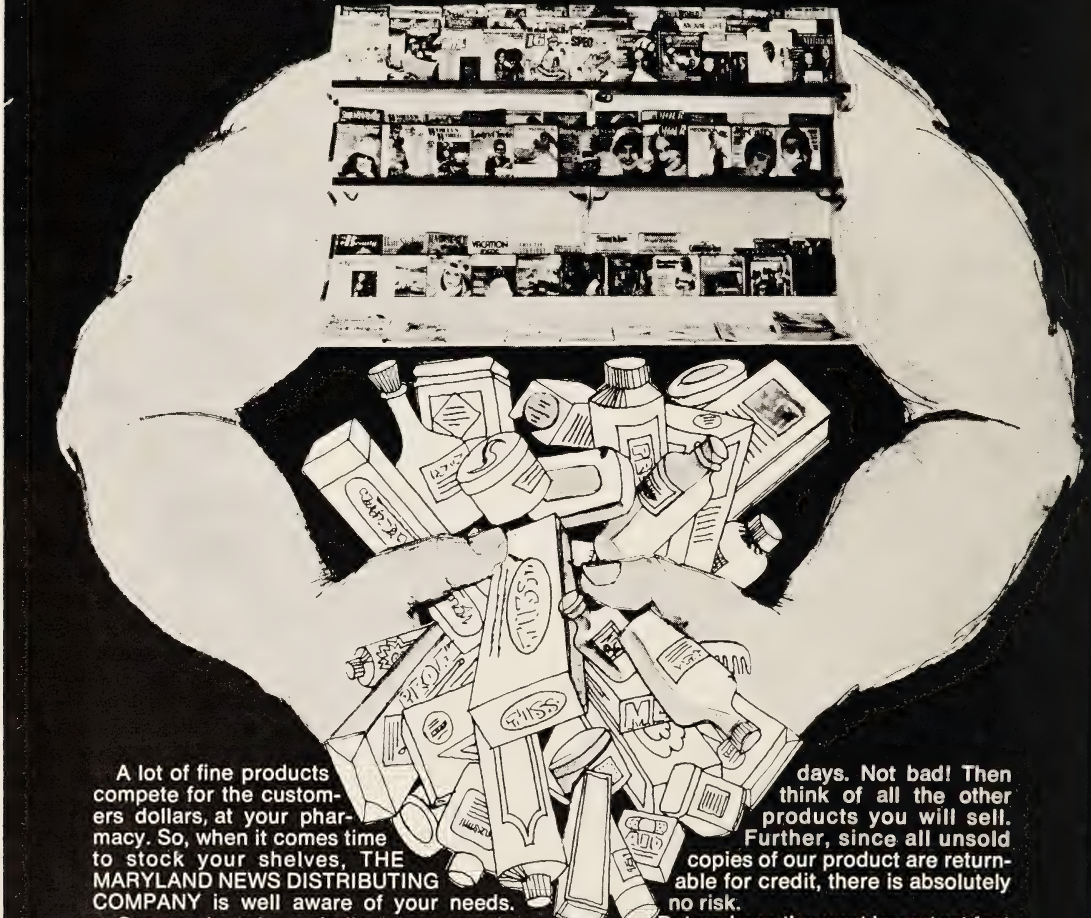
STANDARDS:

Audit must be based on standards of some kind for determining the appropriateness of the process or outcome in relation to the overall system's needs or the individual patient's needs. Unquestionably, there is little knowledge and/or agreement as to what standards to use. Yet, without formal standards, objective evaluation and analysis is impossible. In any case, standards should be developed so that they may identify certain points in the process at which review should take place. The standards selected must not be permitted to lock the practice into a rigid mold. They should outline minimal service requirements and should be reviewed periodically to accommodate clinical, technical and scientific developments.

PEER REVIEW:

Evaluation of both standards and the data developed through audit must, by definition, be based on peer review. Evaluation should not be used to tell professional subordinates exactly what to do, as this may well stifle initiative and arouse resentment. It is conceivable that data could be reviewed routinely by the chairman of the particular section and that peer review, encompassing pharmacists from other areas, could be performed episodically.

Help Yourshelf...



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JOINT EVALUATION:

It is probably virtually impossible to evaluate pharmacy processes, even if specific outcomes are not taken into consideration, without recognizing that there are many areas which not only warrant but demand joint discussion and evaluation with other hospital departments. Audit embodies the principle that a department should be responsible to its constituency. Pharmaceutical services of all types have advanced to a sophisticated level that now requires close interactions with other hospital components and, thus, interdisciplinary evaluation seems mandatory.

In attempting to form an interdisciplinary evaluation, it must be taken into consideration that the delivery system quite often is not yet an integrated system, and joint evaluation might well dissipate into discussions of technical details, rather than fix on patient care responsibilities.

Future Analysis

One would hope that, ultimately, an analysis can be developed which is empirical, i.e., one that does contain quantitative findings. Both the benefits and cost of the service should be measured and valued simultaneously and compared. The link between input and output should be ascertained empirically and should neither be speculative nor hypothetical. Two methods could be used. The first of these is cost-benefit (CB) analysis, which aims to do in the public sector what supply and demand analysis does in the private sector of industry. The aim of CB is to adopt those projects or services which yield the greatest surplus of benefits over cost. The problem is one of valuation. Among the items most likely to be omitted are the so-called intangible benefits, which are especially prominent in the health care field.

One can escape the difficulty of valuation by using cost-effectiveness (CE) analysis. It is less demanding and does not require valuation of all benefits in terms of a common denominator. CE analysis requires that benefits be measured by physical terms. Once an objective or output is specified, the aim is to minimize the cost of attaining it.

Both CB and CE analysis imply the measurement of outcomes associated with a particular service. Presumably, there is a link between inputs and outputs that is measurable and known, a link that, in the health care field, is often quite tenuous.

Nevertheless, in establishing an audit procedure, it might be worthwhile to keep in mind that, ultimately, either CB or CE analysis might well be demanded of the department.

For pharmacy departments, the following could be suggested:

1. Establish a process audit

   In establishing this procedure, please keep in mind that many areas in a pharmacy department may already have processes which might form the basis for an acceptable audit. For example, there might be a quality purchasing form, computer print-outs on dated drugs, a formulary, procedures for environmental and product testing in the I.V. Admixture laboratory, control procedures in the packaging laboratory, procedures for use of patient profiles, kardex rounds, and others.

2. Having established a process audit operational, the department could then attempt to initiate an interdisciplinary audit.

3. Following this, an outcome audit could be considered.

4. Based on 1, 2, and 3, a CE analysis could well be attempted.

To establish a process audit, the following questions would have to be answered:

1. Decide who will do the audit.

2. Decide whether audit will be performed in a continuous or episodic manner.

3. Define purpose of process to be audited.

4. Define process to be audited.

5. Define and develop standards against which audit data can be measured.

6. Suggest peer review group to audit standards and audit data. How frequently should peer review be performed?

7. Develop audit forms.

8. Develop feedback system.

9. Suggest interdisciplinary process evaluation (which disciplines should participate and how).

   Interdisciplinary audit could well be based on kardex rounds, medication errors, etc.

news MP

A.Z.O. News

Kappa Chapter of Alpha Zeta Omega Pharmaceutical Fraternity sponsored a special continuing education program on urinary tract infection on January 12, at the Suburban House, Pikesville. The Annual Joint Dinner was slated for March 2 at the Prime Rib Room.

Eastern Shore Pharmaceutical Society

MPhA President Paul Freiman was the guest speaker at the Winter Meeting of the Eastern Shore Pharmaceutical Society held on January 26 at Federalsburg, Maryland. He spoke on pharmacy legislation in 1975.

Upper Bay Pharmaceutical Association

New officers elected for the 1975 year of the Upper Bay Pharmaceutical Association are: President, David Ayres; First Vice President, Jonas Youssem; Second Vice President, John Conrad; Secretary, Robert M. Plummer; and Treasurer, Charles Bernard. The Executive Committee members are: Edward D. Sears, Donald Breidenbaugh, Robert Jacinski and Uldis V. Pronis.

The new officers were installed on January 26 at an Installation Dinner Banquet held at Weavers Restaurant in Elkton, Maryland. Guests included Dr. and Mrs. William J. Kinnard.

NCPG Elects Officers

Recently elected to office in the National Catholic Pharmacists Guild of the United States were: Rev. Richard L. Schendt, Chicago, Spiritual Director; Mary E. Keating, New Bedford, Mass., Honorary President, 1974; Brother Elias Edelen O.H., Ojai, Calif., Honorary President, 1975; Sylvester H. Dretzka, Milwaukee, President; Loftus E. Emdin, Jr., Utica, N.Y., Senior Vice President; Ronald J. Pytel, Chicago, Vice President; and Ursula E. Heyer, Baltimore, Secretary-Treasurer. Miss Heyer is Immediate Past President of the Guild.

CHESTER L. PRICE, MPhA member, has been named Director of Pharmacy Services at Fallston General Hospital. Mr. Price is President of Fallston Medical Services and holds a faculty appointment as Clinical Instructor in Pharmacy at the University of Maryland School of Pharmacy. MICHAEL A. LANG, Upjohn Representative, has been assigned to the Baltimore territory. He is a graduate of Washington College in Chestertown, Maryland. NORMAND A. PELISSIER, Assistant Editor of *The Maryland Pharmacist* since July, 1970, has announced his resignation from this position. Mr. Pelissier has been assigned additional responsibilities at the Union Memorial Hospital in Baltimore.

National Formulary XIV

Expansion of scope and refinement of standards characterize the recently published Fourteenth Edition of the National Formulary which becomes official on July 1, 1975.

Employing a new format, NF XIV specifications and requirements of primary concern to the pharmacist for the packaging, storage, and labeling of quality drugs are conveniently located below the official definition of each article. The standards are helpful to the pharmacist not only in meeting legal obligations, but also in providing professional guidance to patients on proper packaging and storage of drug articles.

All registered pharmacies in the State will be required to have on hand copies of both the United States Pharmacopeia and the National Formulary. These may be obtained through the MPhA office, 650 W. Lombard Street, Baltimore, Maryland 21201, Phone 727-0746.

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When you move—

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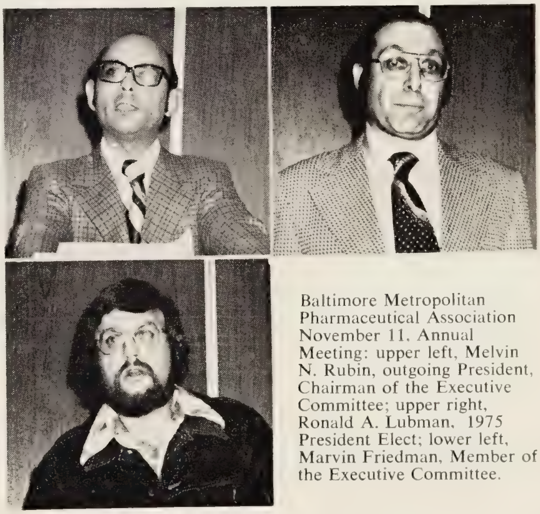
Thank you for your cooperation.

Nathan I. Gruz, Editor
Maryland Pharmacist
650 West Lombard Street
Baltimore, Maryland 21201

Harry Schrader, right, was presented with the MPhA Honorary President's Award by MPhA Board Chairman Anthony G. Padussis. He is a past President of the Calvert Drug Company.

MPhA Past President Anthony G. Padussis, center, is presented with the Immediate Past President's Award by Wilfrado Quiambao, E. R. Squibb Representative. Looking on is District Manager for E. R. Squibb, Gerald Bringenberg.

Sydney L. Burgee, Jr., first Speaker of the MPhA House of Delegates (1971-1972), was presented with a gavel-plaque citation for service at the November 14 MPhA Regional Meeting.



Baltimore Metropolitan Pharmaceutical Association November 11, Annual Meeting: upper left, Melvin N. Rubin, outgoing President, Chairman of the Executive Committee; upper right, Ronald A. Lubman, 1975 President Elect; lower left, Marvin Friedman, Member of the Executive Committee.

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MPhA Legal Counsel Joseph Kaufman, center, and Alexander J. Ogrinz, Jr., Acting Chief, Division Drug Control for State, left, participated on a panel with MPhA Executive Director Nathan I. Gruz, right, at the December 15 meeting of the Prince Georges-Montgomery County Pharmaceutical Association.

Dr. Abraham Silver, right, Medical Director of Camp Glyndon, a special camp for diabetic children, was the guest of pharmacist Charles E. Spigelmire on his weekly program "Your Best Neighbor". Spigelmire serves as Treasurer for the Baltimore Metropolitan Pharmaceutical Association and as Chairman of MPhA's Public Relations Committee.

obituaries

Charles Rose Anderson

Charles R. Anderson, 74, a 1921 graduate of the University of Maryland School of Pharmacy, died on December 26. He was a former member of the Maryland Pharmaceutical Association.

W. Dale Timmons

W. Dale Timmons, 68, a 1926 graduate of the University of Maryland School of Pharmacy and member of the Maryland Pharmaceutical Association died on December 10.

LeRoy F. Kappelman

LeRoy F. Kappelman, 65, real estate broker and pharmacist, died on December 16. He graduated from the University of Maryland School of Pharmacy in 1929.

Dr. Nathan Snyder

Dr. Nathan Snyder, 68, a 1925 graduate of the University of Maryland School of Pharmacy and 1930 graduate of the School of Medicine, died on December 13. He was a former member of the Maryland Pharmaceutical Association and Baltimore Metropolitan Pharmaceutical Association.

Paul Schochet

Paul Schochet, 70, died on December 21. He graduated from the University of Maryland School of Pharmacy in 1924.

Dr. Joseph R. Bernardini

Dr. Joseph R. Bernardini, 77, a Maryland pharmacist by reciprocation and dentist, died on November 24.

Edward S. Marciniak

Edward R. Marciniak, 79, a 1924 graduate of the University of Maryland School of Pharmacy, died on January 7.

Frederick B. Eason

Frederick B. Eason, 68, died in Cambridge, Maryland on January 8. He was a 1929 graduate of the University of Maryland School of Pharmacy.

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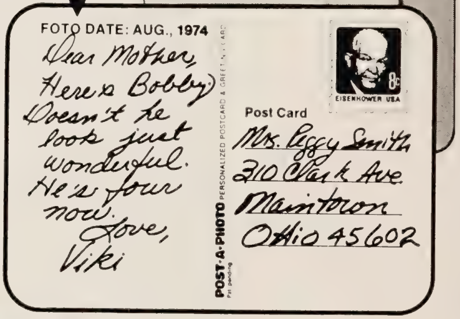

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Tuesday
July 15

Continental breakfast will be served aloft.

Arrive London in the morning, local time. Passengers will be met at the airport and transferred to the lovely HOTEL METROPOLE, where seven nights will be spent in modern accommodations with private bath. Baggage will be brought to the hotel separately and placed directly in each person's room.

Tuesday
July 15
to
Tuesday
July 22

IN LONDON THE FOLLOWING IS INCLUDED:

Full American breakfast at your hotel.

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Half-day tour of the oldest part of London. Relive history at the Tower of London, viewing the grim mementoes of this ancient fortress and prison. Here you will gaze in awe at the magnificent Crown Jewels of England on display at the Tower, guarded by the famed "Beefeaters," garbed in their ancient costumes of crimson and gold. Then, passing the Bank of England and the Stock Exchange, visit St. Paul's Cathedral, Christopher Wren's masterpiece.

Half-day tour of the fashionable West End of London takes you along the Thames Embankment past Big Ben and the Houses of Parliament to Westminster Abbey, burial place of many of England's most famous men and women. The tour proceeds down Whitehall and the Mall to Buckingham Palace where you will watch one of the most impressive sights in the world . . . the scarlet-coated pageantry of the Changing of the Guard.

Half-day excursion through the lovely countryside to stately Windsor Castle, built by William the Conqueror and royal residence for 800 years. Cross the meadows of Runnymede, associated with the Magna Carta and site of the Kennedy memorial, to Hampton Court Palace, built by Cardinal Wolsey. After viewing its impressive grounds and gardens, return to London via Eton, the famous school founded by Henry VI in 1440.

OPTIONAL TOUR to Stratford-on-Avon. Depart your hotel in the morning for a drive through the historic countryside to Stratford-on-Avon, geographically the center of England, and birthplace of William Shakespeare. Elizabethan England still lingers among the narrow streets of Stratford in the quaint old timbered inns and houses, with overhanging gables and tall brick chimneys. After lunch you will visit the house where Shakespeare was born . . . Trinity Church where Shakespeare is buried . . . and the Shakespeare Memorial Theatre, beautifully set on the edge of the River Avon, along which graceful white swans glide majestically. A short drive to Shottery will provide the opportunity to visit Anne Hathaway's Thatched cottage.
COST: $18 per person, including lunch

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- **BLUE BOAR RESTAURANT**—*Situated only five minutes from the theatre district, the Blue Boar serves a fine dinner from a diversified menu.*
- **IL MULINO**—*Well located and specializing in typical dishes from North, Central and Southern Italy, including a very good selection of wines.*
- **HUNGARIAN CSARDA & GYPSY CELLAR**—*London's most famous Hungarian restaurant, situated in the heart of Soho, where exotic food is taken to the accompaniment of a romantic Gypsy violinist.*
- **LOTUS HOUSE**—*Dine on delicious Chinese cuisine and dance amid Oriental decor.*

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Tuesday
July 22

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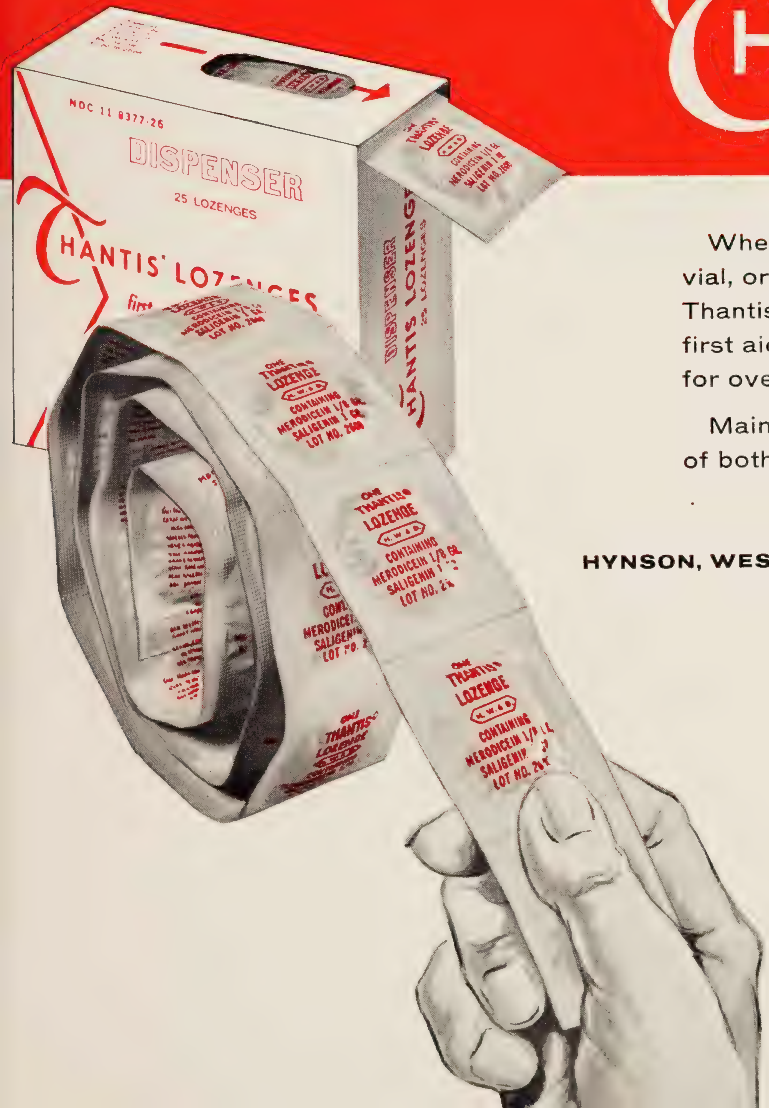
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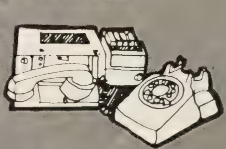

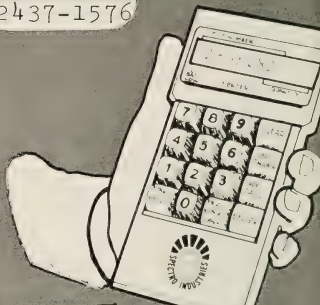

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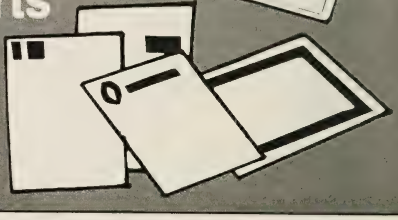

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FEBRUARY 1975
VOL 51
NO 2

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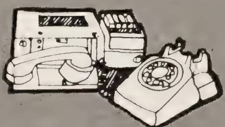

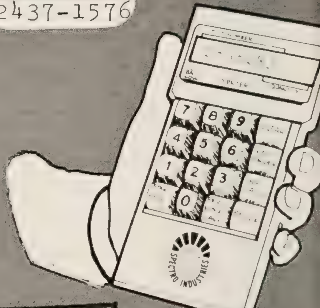

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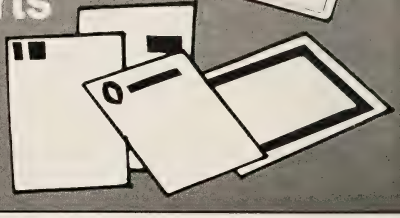

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THE MARYLAND PHARMACIST

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FEBRUARY 1975 VOL. 51 NO. 2

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editorial

Third Party Programs: Quality Care and Reimbursement Are Inseparable

As has been predicted for a long time, prescription insurance programs—"third party plans"—are assuming an ever greater role in pharmacy practice and pharmacy economics.

Our concern as pharmacists in this matter revolves about two prime aspects which are inextricably intertwined. First, is the nature and quality of pharmaceutical services provided, and second, the policies of the insurer or carrier.

Of paramount concern, of course, is the pharmacist's professional responsibility to provide pharmaceutical services and products meeting the high standards that are necessary in securing comprehensive and effective health care to all patients. The pharmacist's basic role has been to compound and dispense medication on the prescription orders of prescribers. However, we all certainly know that unless this essentially *impersonal* function is combined with a *personal* pharmacist-patient relationship, the patient may be tragically short changed.

For the most part, this *personalized* patient relationship must be, of course, predicated upon the choice by the patient of a *personal* pharmacist. This personal or family pharmacist records a patient medication history. He creates a patient drug profile containing the personal, medical, pharmaceutical and medication monitoring data required by the pharmacist in order to make informed judgments. Thus the pharmacist who has been prepared by his undergraduate collegiate curriculum or by his own post-graduate educational endeavors is qualified to safeguard the patient as an authentic member of the so-called health team. Such a pharmacist can monitor drug therapy, advise patients and counsel with physicians and other prescribers.

We must, at the same time, face the administrative, management and economic factors within which the pharmacist must operate. These factors dictate whether the pharmacist's practice will be economically viable.

If the beneficiaries of third party prescription insurance programs are to receive the kind of comprehensive pharmaceutical services that are necessary to safeguard the public against the many hazards of irrational prescribing, under-medication, drug allergies, drug-drug interactions, drug-food interactions and other undesirable sequelae, then the policies and fees paid pharmacists must reflect the costs involved in providing such services.

For far too long everyone outside the profession of pharmacy has been either ignorant of or unwilling to face the realities of the necessity for comprehensive high quality pharmacy service. It is not only the general public that has not been made aware of and convinced that there is a kind of pharmaceutical service which can make a difference in their state of health and longevity, but the decision makers in government, in insurance carriers, in unions and most critical of all—the medical profession.

Pharmacists are trying to provide the patients covered by third-party programs the best possible pharmacy service, but equitable administrative policies and reasonable and just fees are required to provide the service and remain economically sound.

—**Nathan I. Gruz**

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Nathan I. Gruz, *Executive Director*

January 9, 1975

Among communications received were:

- Letter from COPES regarding the Portland Retail Druggists vs. Abbott Laboratories court decision on drug purchases by non-profit hospitals for use by other than in-patients.

- Response from Dean Kinnard to position of Board of Trustees on article in Baltimore Sun Magazine.

- Information from NARD regarding state legislation.

- President Freiman reported on the following: Attorney General's opinion on pharmacies remaining open without a pharmacist; letter in the Sunpapers from Executive Director Gruz; attendance at meetings: Board of Pharmacy, Drug Evaluation Committee, Swain Seminar Committee, Delegate Torrey Brown, representatives of MSHP on Institutional Pharmacy regulations, Delegate L. Maurer; reply from Senator Mathias to a statement by Republican congressional committee on prescription service; spoke of efforts resulting in increase in Medicaid fee and pointed out the acknowledgement in the State Health Department's Bulletin of the role of MPhA in achieving the increase.

- Treasurer's report was accepted as presented. The Executive Director reported for the twelve month period of 1974.

- Executive Director's Report reviewed the activities leading up to the approval of the Medicaid fee through the Board of Public Works and the joint Legislative Budget Committee involving two hearings in Annapolis. Other activities included meeting on security problems with Police Commissioner Pomerleau; BMPA Annual Meeting; Pharmpac campaign; institutional pharmacy regulations; 1974 bill on labels regarding hazardous driving (HB 1636); Balassone Memorial Lecture; Swain Pharmacy Seminar; federal drug enforcement agency survey of role of association in drug control; Maryland Society of Association Executives regarding non-dues income; hearing on nursing home fee regulations; Board of Pharmacy meeting; APhA meeting of affiliated state executives; conference at APhA regarding membership and dues administration; NPIC annual meeting; meeting of Prince George's-Montgomery County Pharmaceutical Association which involved a physician who prescribed for addicts; work on a portable display unit for exhibits; arrangements for RX series of license plates to be issued to MPhA members.

- Membership Report and approval of new members. Total for 1974 reflected fewer graduates who were given complimentary membership and decline in the number of proprietors.

- Convention & Trips—Mr. Lubman reported on sites under consideration for the convention. He reported on the Hawaii seminar that two full planes (approximately 368 persons) were signed up. He reviewed plans for the London trip, July 14-22. Mr. Lubman was commended for an excellent job.

- Legislative Committee—Mr. Rubin—A meeting was held with Delegate Torrey Brown who will introduce drug product selection amendment, continuing education, patient information and disclosure of actual manufacturer bills. The matter of the posting bill will be discussed with Delegate Maurer. A bill to require pharmacy's charge to reflect any discounts given other third party programs is being considered.

- Drug Evaluation Committee—Work is being done on publication of evaluations in the *Maryland Pharmacist.*

- Swain Seminar—Mr. Seidman reported the program for March 20 at Quality Court, Towson, on the subject of medication record systems.

- Professional Affairs—The possibility of an exhibit at Med-Chi Annual Meeting was discussed and referred to Samuel Lichter as chairman.

- Medicaid and Federal Programs—Mr. Rubin discussed the matter of regulations on acquisition costs and federal regulations for basis of cost. The submission of comments to proper authorities was authorized.

- Board of Pharmacy—A mailout on various regulations was sent by the Division of Drug Control. There was a discussion on the possible misuse and abuse of dextromethorphan. It was pointed out that the Poison Control Center is getting reports of overdoses and there is need of establishing standards of professional practice as to display and sale under supervision of a pharmacist.

It was decided to request copies of the minutes of the Board of Pharmacy and its agenda in advance. Matter of the status of copies between pharmacies was discussed.

- Mr. Lichter reported on the joint Peer Review Committee and that he has been appointed Chairman of the subcommittee to meet with Med-Chi.

- The Consumer Affairs Committee under Mr. Fedder which includes two consumers has had an excellent meeting and will continue its work.

- It was moved that a protest be made to Parke-Davis regarding its policy of not selling its surgical supplies to all pharmacy accounts.

- Quinidine shortages—discussion indicated the need to get more information.

- A recommendation was received that the labels of prescriptions include both the generic name and the name of the manufacturer.

New Members

The following is a list of the new members approved at the January 9, 1975 meeting of the Board of Trustees of the Maryland Pharmaceutical Association:

Walter S. Rosenberg, Silver Spring, Mattapony Pharmacy
Frank Applestein, Pikesville, Kelly & Poggi Pharmacy
Abraham Schapiro, Baltimore, Retired
Jerome Karpa, Baltimore, Middle River Pharmacy
Richard Matheny II, Gaithersburg, Village Pharmacists, Inc.
Aaron Rosenstadt, Bethesda, Division Drugs
Bernard Macek, Baltimore, Patterson Park Pharmacy, Inc.
Lester S. Constantine, Rockville, Dart Drug
Michael Esrig, Silver Spring, Randolph Drugs
Roy Roger Atlas, Silver Spring, Randolph Drugs
Leon Levin, Gaithersburg, Dart Drug
Grover Bragg, Ocean City, Welsh Pharmacy
Joseph Wright, North East, City Pharmacy of Elkton

February 6, 1975

- Among communications received was a letter of resignation from Normand Pelissier as Assistant Editor because of change in his position at Union Memorial Hospital and a letter from NPIC outlining their programs for the future.

- President Freiman commented on the excellent Hawaii Seminar and Tour and that Ronnie Lubman and all concerned be commended. Attended conference with Delegate Maurer in Annapolis regarding price posting legislation. Addressed meeting at Eastern Shore Pharmaceutical Society January 29. Testified on Senate Bill 92 on RX price advertising. Upon request of Committee Chairman McGuirk, he sent a letter regarding drug interactions and use of patient profiles. Commented on flier sent to MPhA members on this bill. Attended the Anne Arundel County Pharmaceutical Association installation dinner and met with State Department of Health Medicaid officials.

- Treasurer's Report was accepted as presented.

- Executive Director's report outlined the agenda of the day which included reception and buffet for invited members of the General Assembly. Reported on the extensive meetings and many telephone calls on legislative matters. Reported on a new program of the State Health Department for ambulatory mental health patients above the Medicaid level of income. Participating member pharmacies may charge AWP costs plus the medicaid fee in place of distribution to hospitals. Attended Maryland Society of Association Executives meeting which was addressed by Governor's legislative officer, Alan Wilner. Urged attendance at the forthcoming BMPA installation banquet. Announced adoption by the State Health Department of amended regulation which reads that pharmacist shall be paid for "compounding or dispensing" of medicaid prescriptions rather than "processing." Met with Baltimore City Health Department officials regarding an over-supply of antibiotics which need reconstitution. It was pointed out that only a pharmacist or a physician for his own patients may reconstitute. Letter from Dean Kinnard on the continuing education legislation was received. Forthcoming Poison Prevention Week activities were announced. Chairman Padussis reported on his attendance at the Upper Bay Pharmaceutical Association meeting.

- Membership as of January 31 was reported ahead of same time last year. The number of recent graduates joining MPhA has increased with a total of 45 pledge plan members. A membership solicitation was sent to nonmember pharmacists in December.

- Convention and Trips—The Hawaii Seminar and Tour was reported on. Chairman Lubman is reviewing several sites for the convention. The Regional Meeting is scheduled for April 17 with LAMPA suggesting Harper's Ferry because of the Schrader Pharmacy which has been installed there.

- Medicaid—Mr. Rubin reported on a meeting held with the State Health Department officials. The Attorney General's opinion regarding AWP (Average Wholesale Price) as basis of cost was discussed. Also the Federal MAC or maximum allowable cost proposals. MPhA representatives presented the possibility of going to acquisition cost plus an additional percentage of 10% or more, in addition to the fee and maximum allowable cost for approximately 100 drugs. Also discussed were compounding fees for prescriptions involving OTC drugs, extra charge for third party administration, elimination of telephone preauthorization and reviewing the maximum dollar limit per prescription.

- Legislation—Mr. Rubin reviewed the status of SB 92 (RX Price Advertising), House Bills 258, 260, 581, 582 and the proposal on prescription price posting discussed with Delegate Maurer and other delegates. HB 257 for a council on Continuing Education was discussed in detail. It was moved to accept amendments suggested by the Dean and in connection with Board of Pharmacy to amend it to read "shall act on renewal" and seek acceptance by the MSHP of a letter committing MPhA to appoint an institutional pharmacist in consultation with MSHP. An exempt narcotic bill to require a prescription will be introduced by Senator Crawford. Mr. Gruz reported on status of regulations on physicians' assistants.

- Swain Seminar—Mr. Seidman reported on the seminar speakers and program on Patient Medication Record Systems.

- APhA Annual Meeting representation was discussed. Nomination of Mr. Simon Solomon as Honorary President for APhA which was approved.

- Dextromethorphan and reports of possible abuse were referred to the Professional Affairs Committee.

New Members

The following is a list of the new members approved at the February 6, 1975 meeting of the Board of Trustees of the Maryland Pharmaceutical Association:

Gabriel Contrino, Baltimore, Montebello Hospital

Bernard Fischer, Baltimore, Pharmacy Director, St. Agnes Hospital

Victoria White, Rockville

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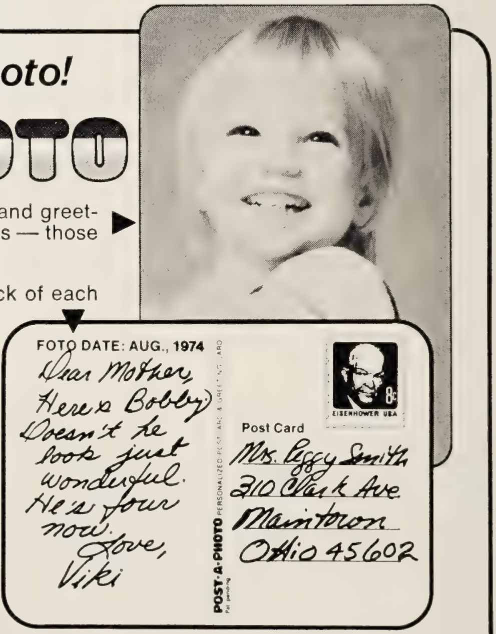

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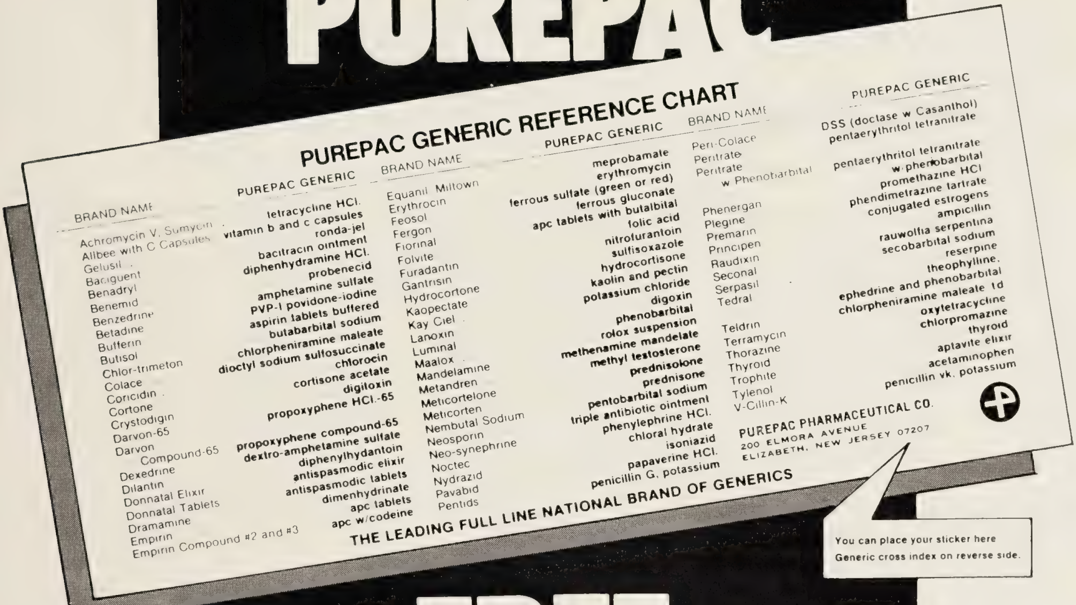

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Gelusil	ronda-jel	Feosol	ferrous sulfate (green or red)	Peritrate w Phenobarbital	pentaerythritol tetranitrate w phenobarbital
Baciguent	bacitracin ointment	Fergon	ferrous gluconate	Phenergan	promethazine HCl
Benadryl	diphenhydramine HCl.	Fiorinal	apc tablets with butalbital	Plegine	phendimetrazine tartrate
Benemid	probenecid	Folvite	folic acid	Premarin	conjugated estrogens
Benzedrine	amphetamine sulfate	Furadantin	nitrofurantoin	Principen	ampicillin
Betadine	PVP-I povidone-iodine	Gantrisin	sulfisoxazole	Raudixin	rauwolfia serpentina
Bufferin	aspirin tablets buffered	Hydrocortone	hydrocortisone	Seconal	secobarbital sodium
Butisol	butabarbital sodium	Kaopectate	kaolin and pectin	Serpasil	reserpine
Chlor-trimeton	chlorpheniramine maleate	Kay Ciel	potassium chloride	Tedral	theophylline, ephedrine and phenobarbital
Colace	dioctyl sodium sulfosuccinate	Lanoxin	digoxin	Teldrin	chlorpheniramine maleate td
Coricidin	chlorocin	Luminal	phenobarbital	Terramycin	oxytetracycline
Cortone	cortisone acetate	Maalox	rolox suspension	Thorazine	chlorpromazine
Crystodigin	digitoxin	Mandelamine	methenamine mandelate	Thyroid	thyroid
Darvon-65	propoxyphene HCl.-65	Metandren	methyl testosterone	Trophite	aptavite elixir
Darvon Compound-65	propoxyphene compound-65	Meticortelone	prednisolone	Tylenol	acetaminophen
Dexedrine	dextro-amphetamine sulfate	Meticorten	prednisone	V-Cillin-K	penicillin vk, potassium
Dilantin	diphenylhydantoin	Nembutal Sodium	pentobarbital sodium		
Donnatal Elixir	antispasmodic elixir	Neosporin	triple antibiotic ointment		
Donnatal Tablets	antispasmodic tablets	Neo-synephrine	phenylephrine HCl.		
Dramamine	dimenhydrinate	Noctec	chloral hydrate		
Empirin	apc tablets	Nydrazid	isoniazid		
Empirin Compound #2 and #3	apc w/codeine	Pavabid	papaverine HCl.		
		Pentids	penicillin G, potassium		

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FEDERAL, STATE AND CITY

FEDERAL:

On January 1, 1975, the following Federal wage and hour rates became effective:

> For establishments covered by the Fair Labor Standards Act prior to February 1, 1967, the minimum rate is $2.10 per hour.
>
> For establishments brought under the Act in 1967 or later, with retail sales of at least $250,000 per year (excluding excise taxes), the minimum is $2.00 per hour.

Both of the above categories must pay 1½ times the employees' regular rate of pay for all hours worked beyond 40 in a work week.

Retail service establishments may apply to the Wage and Hour division for a Certificate of approval to employ full-time students at 85% of the minimum wage for the establishment. These students must not work more than 8 hours per day nor more than 40 hours per week when school is not in session and no more than 20 hours per week when school is in session except when a full-day holiday occurs and in that event the maximum may be 8 hours for each full day of school holiday.

Retailers who sell food and drink as only part of their business (for example: pharmacies with a soda fountain or luncheonette) are to follow the regulations for restaurants for that part of their operation. Employees who work exclusively in the preparation or sale of food and drink in covered establishments must receive a minimum of $2.00 per hour. Tips may be counted as 50% of the minimum wage provided the employee is getting and keeping that amount of tips.

Time and one-half overtime pay for food service employees in covered establishments applies on hours worked in excess of 48 in a work week.

STATE OF MARYLAND:

The State of Maryland's Wage and Hour Regulations have been declared unconstitutional. A bill to authorize Wage and Hour Regulations is now before the Maryland General Assembly.

BALTIMORE CITY:

The Baltimore City Minimum Wage Law provides that every employer doing business in Baltimore and employing three or more persons shall pay a minimum of $2.10 per hour. This was effective beginning January 1, 1975.

An exception to this is any retail establishment which sells food and drink as only part of its sales. In these businesses, the employees who are exclusively occupied with the preparation or sale of food and drink are covered by the regulations for restaurants and the minimum wage beginning January 1, 1975 was $2.00 per hour. The employer may credit up to 50% of the applicable minimum wage as coming from tips if the employee actually receives the amount credited and providing the employee regularly receives more than $20.00 per month in tips.

Full-time students employed in Baltimore may be paid 85% of the minimum wage applicable to the business providing the student works no more than 28 hours per week while attending school.

* * *

Violations of Wage and Hour Regulations may result in criminal prosecution and civil suits by employees for recovery of underpayment.

* * *

Minimum wage rates will increase again and other changes will take place January 1, 1976.

* * *

If more detailed information or instructions are needed, call, write or see in person the government agencies responsible for administering wage and hour regulations, as follows:

U.S. Labor Department, Employment Standards
Administration, Wage and Hour Division
111 N. Calvert Street
Baltimore, Md. 21202
Telephone: 962-2265

State of Maryland Division of Labor and Industry
1 S. Calvert Street
Baltimore, Md. 21202
Telephone: 383-2260

The Minimum Wage Commission for Baltimore
Suite 1100, 26 S. Calvert Street
Baltimore, Md. 21202
Telephone: 396-4835

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Pharmacy Changes

The following are the pharmacy changes for the month of January:

New Pharmacies

Crownsville Hospital Center—Pharmacy, S. J. Cooper and C. E. Reynolds, Jr., Pharmacists; Crownsville, Maryland 21032.

Fuller Medical Center Pharmacy, Hillel Aarons, President; Box 285, Ridge Road, Baltimore, Maryland 21237.

Dart Drug Corporation, Jumper's Hole, Herbert H. Haft, President; 8164 Ritchie Highway, Pasadena, Maryland 21122.

Pantry Pride Pharmacy, Jack Friedland, President; Liberty Court Shopping Center, Randallstown, Maryland 21133.

Changes of Ownership, Address, Etc.

Salisbury Drugs, I. J. Koppleman, President — nonpharmacist (Change of ownership—was: I. E. Kerpelman, President); 722 South Salisbury Boulevard, Salisbury, Maryland 21801.

No Longer Operating As Pharmacies

Medical Center Pharmacy, Milton R. Watkowski; Ritchie Highway, Severna Park, Maryland 21146.

Village Store, Inc., Louis Glaser, President; 511 Avondale Road, Baltimore, Maryland 21222.

Duren and Smith Pharmacy, John G. Smith and Chauncey L. Duren; 8901 George Palmer Highway, Lanham, Maryland 20801.

The following are the pharmacy changes for the month of February:

New Pharmacies

Seven Locks Pharmacy, Inc., Joseph Kasser, President; 1083 Seven Locks Road, Rockville, Maryland 20854.

Fallston General Hospital—Pharmacy, K. P. Bonovich, MD, N. B. Mangione, R. D. Poteet, H. G. Smeltzer; 200 Milton Avenue, Fallston, Maryland 21047.

McClean Drugs, Melvin G. Kitt, President; Martin Boulevard & Compass Road, Baltimore, Maryland 21220.

Changes of Ownership, Address, Etc.

Farlow's Pharmacy, K. B. Bozman and J. E. Parker; 1 North Main Street, Berlin, Maryland 21811.

No Longer Operating As Pharmacies

Fink's Drug Store, Francis T. Fink; Martin Boulevard & Compass Road, Baltimore, Maryland 21220.

Myer's Drug Store, Mary L. Myers; 100 South Main Street, Mount Airy, Maryland 21771.

Duvall Pharmacy, Inc., Leon Tattar, President; 2906 Garrison Boulevård, Baltimore, Maryland 21216.

David's Pharmacy, David Smulovitz; 800 Washington Boulevard, Baltimore, Maryland 21230.

calendar

May 27 (Tuesday)—University of Maryland School of Pharmacy Alumni Association Annual Alumni Banquet, Eudowood Gardens.

June 6-8—Tenth Annual Hospital Pharmacy Seminar, Maryland Society of Hospital Pharmacists, Sheraton Fontainbleau, Ocean City, Maryland.

June 25-26—MPhA Convention, The Hilton Inn —Pikesville.

July 14-22—MPhA London Tour and Seminar

Mid-January 1976—MPhA Acapulco-Mexico City Tour.

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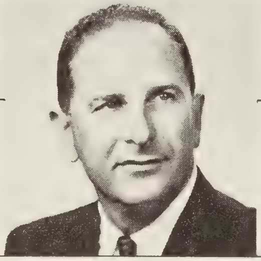


This review has been prepared by:
Morton J. Rodman, Ph.D.
Chairman, Department of Pharmacology, College of Pharmacy, Rutgers University, noted author and consultant to the AMA and government agencies.

Hypertension–its nature and complications

Essential hypertension, which afflicts more than 25 million Americans, is one of the nation's most vital health problems. As a health care professional, the pharmacist can play an important role in communicating the nature of hypertension, its dangers if untreated, and the effectiveness of modern-day treatment.

As you know, hypertension may be mild, moderate or severe, based on blood pressure and clinical and laboratory evidence of resulting pathology. Sustained elevation of blood pressure may cause organic damage. Even with mild to moderate hypertension, patients run a high risk of dying of strokes, heart attacks, congestive heart failure and uremia—preventable with early diagnosis and adequate drug treatment.

Although there is no cure for primary (essential) hypertension, most cases can be controlled by treatment with antihypertensive drugs developed in the past two decades.

The classes of antihypertensive drugs

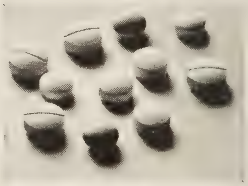
Several classes of antihypertensive drugs are now available; all affect the circulation in one or both of two main ways by:
(1) lowering peripheral resistance
(2) decreasing cardiac output.

Diuretics including the *thiazides* (e.g.: *hydrochlorothiazide*), *quinethazone, chlorthalidone, metolazone* and *furosemide* inhibit tubular reabsorption of sodium ions and help to remove sodium from the body. This is thought to produce two pressure-reducing effects:
(1) Reduction in blood volume, and in turn, cardiac output
(2) Dilation of blood vessels, possibly because removing sodium from their walls makes vasoconstriction in response to sympathetic impulses less likely.

Other drugs like *hydralazine* act mainly by directly relaxing the smooth muscle walls of the arterioles, resulting in vasodilation and reduction in peripheral resistance.

Sympathetic blocking drugs are the most effective modern antihypertensive drugs. They reduce peripheral resistance and cardiac output by blocking the sympathetic pathway between the heart and blood vessels and the brain's vasomotor and cardiac control centers at any of several points in the circuit.

(1) One subgroup is the *postganglionic adrenergic neuron inhibitors* (e.g.: *reserpine, methyldopa,* and *guanethidine*). These agents reduce the amount of norepinephrine in nerve endings, thereby preventing the transmission of impulses which cause vasoconstriction, and also making the heart work harder. These drugs dilate the blood vessels and slow the heart rate, causing blood pressure to drop.



(2) Another subtype, the *ganglionic blocking agents* (e.g.: *trimethaphan* and *pentolinium*), is used mainly in hypertensive crisis to bring about a rapid fall in pressure. These agents act at the ganglia that relay sympathetic pathway messages to the heart and vessels.

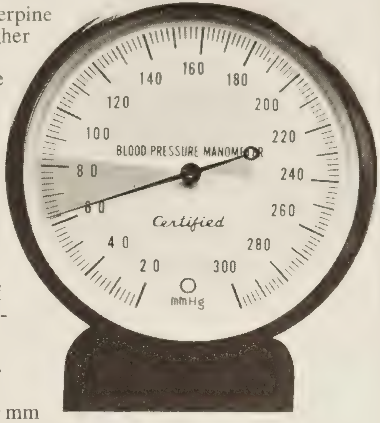
(3) *Clonidine* (recently released) acts centrally to inhibit the sympathetic cardioacceleratory and vasomotor centers.

Management of mild, moderate and severe diseases

The goal of drug treatment, obviously, is to bring the patient's pressure back to normal and keep it there without causing toxic reactions or disabling side effects. The physician tries to select the drug or drug combination best suited to each patient's condition based on the severity of the hypertension. Pharmacists can help patients understand the need to continue treatment despite minor drug-induced discomforts.

Mild hypertension Patients whose pressure rises in response to emotional stress may need no drug treatment other than a mild antianxiety agent combined with reassurance and counseling. Those who do require antihypertensive drug therapy are usually started on an oral diuretic such as *hydrochlorothiazide* or *chlorthalidone*. When a further fall in pressure is desired, the doctor may add *reserpine* (or related *rauwolfia alkaloids*), or *methyldopa*.

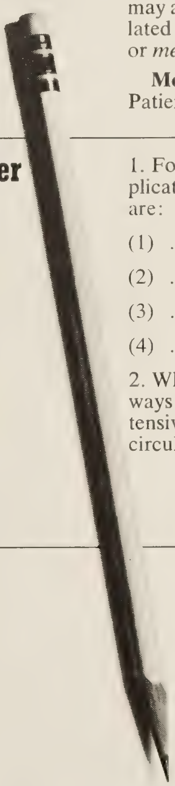
Moderate hypertension Patients with somewhat higher pressure also often receive diuretic-reserpine combinations in higher doses. Sometimes *methyldopa*, a more potent sympathetic blocker, replaces *reserpine*. Because drowsiness or mental depression may occur, some physicians prefer to add a third drug such as *hydralazine* rather than raise dosage of the two-drug combination.



Severe hypertension with diastolic pressure above 130 mm Hg and with clinical signs of vascular damage, a still more potent sympathetic blocker, *guanethidine*, may be required. It is a dependable drug, but since overdoses can cause severe complications, titration is necessary to avoid causing excessive falls in pressure and postural hypotension.

Sudden high rises in pressure (hypertensive crisis) can cause brain damage and other fatal complications if not quickly corrected. Among the most rapid-acting drugs used are the ganglionic blocker, *trimethaphan; sodium nitroprusside;* and the recently introduced *diazoxide*. Parenteral forms of the rapid-acting diuretics, *furosemide* and *ethacrynic acid*, are also employed.

Refresher Quiz



1. Four possibly fatal complications of hypertension are:

(1) . . . .

(2) . . . .

(3) . . . .

(4) . . . .

2. What are the two main ways in which antihypertensive drugs affect the circulation?

3. What are the two main ways in which thiazide-type diuretic drugs are thought to reduce blood pressure?

4. Match each of the following drugs with the statement that pertains to it.

1 . . . Guanethidine

2 . . . Hydralazine

3 . . . Hydrochlorothiazide

4 . . . Trimethaphan

A. A ganglionic blocking agent used in hypertensive crisis.

B. A diuretic used to begin treatment of mild hypertension.

C. Added to reserpine-diuretic combinations, it helps bring about a further reduction in pressure.

D. A potent adrenergic neuron inhibitor that is dependable in treating severe hypertension.

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DRUGS AND THE PEDIATRIC PATIENT

by

PETER P. LAMY, Ph.D.
ARTHUR N. RILEY, M.S.
DAVID M. ARRINGTON, M.S.

Peter P. Lamy, Ph.D., is a Professor of Pharmacy and Director of Institutional Pharmacy Programs, University of Maryland Hospital/School of Pharmacy, Baltimore, Maryland 21201.

Arthur N. Riley, M.S., is Assistant Director of Pharmacy for Ambulatory Services at the University of Maryland Hospital, Baltimore, Maryland 21201.

David M. Arrington, M.S., was a Graduate at the University of Maryland School of Pharmacy and is now employed by the Department of Pharmaceutical Services, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

The Pediatric Patient and the Pharmacist

There is a segment of the hospital population, the pediatric patient, which has not yet fully enjoyed pharmaceutical services (1-4) frequently extended to the in-patient. The pediatric patient is a "therapeutic orphan" (5). That is only a catchy expression for a fact long known but rarely recognized: the pediatric patient is not just a small adult. The pediatric patient has special needs which are not necessarily attributed to the patient's smaller physical size. Historically, though, size was the only variation recognized in the adjustment of pharmaceutical doses as illustrated by rules such as Clark's, Young's and Fried's Rule (5). As surface area was recognized as a better estimate of dose calculation (6-10), formulas were developed which could be utilized in practice (Table I).

TABLE I

Calculation of A Pediatric Dose

$$\frac{\text{Surface Area of Child's Body}}{\text{Surface Area of Adult's Body}} \times \text{Adult Dose} = \text{approximate dose for the child}$$

or:

$$\text{Surface Area of Child } (M^2) \times \text{Dose}/M^2 = \text{approximate dose for the child}$$

The conversion to dose calculation formulas that use surface area instead of age or size is only a partial answer to the dilemma of "therapeutic orphans" which has evolved. This evolution resulted from some unfortunate tragedies and the legislation which was enacted directly or indirectly in response to these tragedies.

A. There was the case of the "famous" or "infamous" baby food which lacked sufficient vitamin B_6 (Pyridoxine) and thus was cited as a possible cause of convulsions in babies (11).

B. There was the sulfonamide "elixir" tragedy which was a liquid sulfonamide preparation distributed as a pediatric dosage form (12).

C. There was the discovery of the "Chinese Restaurant Syndrome" which ultimately affected the entire baby food industry and caused voluntary removal of monosodium glutamate from all baby foods (13).

D. There was the recognition of the "Gray Syndrome," a toxic effect of chloramphenicol resulting from the newborn's reduced glucuronic acid conjugating capacity (14).

E. There was the thalidomide tragedy which caused fetal malformation in the neonate (15).

These incidents have given rise to legislation and regulations which impose more stringent parameters in the research, development and use of pharmaceuticals. The Food, Drug and Cosmetic Act of 1938 requires a New Drug Application to be submitted which establishes a drug's safety and efficacy, but there has been extreme hesitancy to use infants for experimental purposes. As a result, drug safety and efficacy in children has not been established for many drugs. This, combined with the 1962 amendments which required FDA review of all package inserts, led to a statement for most drugs that discourages their use in pediatric patients. This has brought about the use of approved drugs for unapproved indications in infants and children. As recently as October, 1972, (16) the Food and Drug Administration restated that, "When a manufacturer or his representative, or any person in the chain of distribution, does anything that directly or indirectly suggests to the physician or patient that an approved drug may be properly used for unapproved uses for which it is neither labeled nor advertised, that action constitutes a direct violation of the act." With these events the "therapeutic orphan" evolved.

Pediatric Physiology and Drug Therapy

It is now known that the pediatric patient deserves special attention not only because many drugs administered to them have only been tested in adults, but because the pediatric patient differs from his adult counterpart in many ways.

The physiologic differences of the pediatric patient must be familiar to the pharmacist aiming for involvement in pediatric drug therapy.

A. *Total Body Water:* The percentage of total body water is highest during the first months of life (17). As can be seen in Table II, the percentage of total body water in children, decreases rapidly during the first month of life (18).

TABLE II

Mean Values For Total Body Water As Percentage of Body Weight

Age	*Males & Females*	*Males*	*Females*
0-1 months	75.7		
1-12 months	64.5		
1-10 years	61.7		
10-16 years		58.9	57.3
17-39 years		60.6	50.2
40-59 years		54.7	46.7
60+ years		51.5	45.5

Total body water is approximately 76 percent of the total body weight at the end of the first 30 days of life. This is compared to as much as 83 percent of total body weight in some premature infants. Total body water decreases more gradually during the next ten years of life to approximately 62 percent. It is not until after the first ten years of life that differences due to sex are distinguishable. Differences in total body water may well influence drug therapy since the pediatric patient will have proportionately a larger volume of distribution.

This is most important in those drugs which are distributed in extracellular fluid. Water soluble drugs circulate freely through extracellular fluid, and the dose per unit of weight required to achieve an equal concentration decreases during childhood due to the decreasing extracellular fluid volume. When extracellular fluid volume falls, as in dehydration, the dose per unit of weight of water soluble drug attains a higher concentration. Conversely, the concentration of a water soluble drug is lowered in the edematous child with expanded extracellular fluid volume (19). The intracellular water remains somewhat constant but the extracellular water decreases, as previously mentioned, in a pattern similar to that of total body water. These changes in body water might be due to (20):

(a) an increase in the relative amount of cells found in most tissues
(b) a disproportionately higher development of such organs as muscles that have a high fraction of intracellular water
(c) changes in the amount of fat tissue

The percentage of total body weight represented by plasma volume tends to remain constant.

The differences which may be caused by the variation of total body water was demonstrated with a tetracycline derivative by Sereni *et. al* (21). They reported a difference in the volume of distribution depending on the age of the pediatric patient.

B. *Electrolyte, Acid-Base, Osmolality Balance:* Closely associated with a possible water imbalance are the problems of electrolyte, acid-base and osmolality imbalance. Electrolyte imbalance may occur with severe fluid losses such as in diarrhea or high fever. Acid-base imbalance may occur with dehydration or hyperventilation during respiratory distress. Often, these problems are treated with infusions of electrolytes, mainly sodium bicarbonate. When treatment of this type is initiated hyperosmolality may occur if administration of infusions are too rapid or excessive (22).

Shirkey (23) states that immature organs can vitally affect various mechanisms of detoxification and excretion of drugs. This, in turn, would affect the drug's dose and its administration interval. It may require days, weeks, months, or even years for enzymes which aid in these processes to mature.

C. *Drug Excretion and Metabolism:* The differences between pediatric and adult renal functions are quantitative rather than fundamental. The glomerular filtration rate of the newborn is low compared to that of an adult and the renal tubules are in a state of functional immaturity (24-29). The infant is unable to concentrate urine to the same degree as do adults, a factor to be considered in fluid therapy. The glomerular filtration rate, effective renal plasma flow and the tubular excretory capacity mature at different rates, even within a given individual. Full maturity, however, is normally reached by the end of the second year of life (28-29). The half-life of a number of drugs is increased due to immature kidney function. High and prolonged blood levels of antibiotics in infants have been attributed to low urinary excretion rates (30).

Table III lists some of the antibiotics which have been shown to produce prolonged blood levels in the presence of immature kidney function.

TABLE III

Effect of Immature Kidney Function on the Half-Life of Drugs

Drug	*Half-Life*	*Dose*	*Reference*
Ampicillin	increased	reduced	31, 32
Chloramphenicol	increased	reduced	33
Colistin	unchanged	no change	32
Kanamycin	increased	reduced	34
Methicillin	increased	reduced	31, 32
Neomycin	increased	reduced	32
Oxacillin	increased	reduced	32
Penicillin G	increased	reduced	35
Streptomycin	increased	reduced	34
Tetracycline	increased	reduced	32

Half-lives of other drugs primarily excreted by the kidney may be similarly effected.

D. *Liver Function:* The infant's liver function is immature and the metabolism of many drugs can be affected by this. Approximately two-thirds of all infants develop physiologic jaundice (36, 37). Premature infants are more likely to exhibit hyperbilirubinemia than full term infants. The enzyme system involving bilirubin is active to a lesser extent in the newborn, and this may lead to kernicterus (38). It has been shown that there is competitive albumin binding between bilirubin and some drugs such as sulfonamides, salicylates and others. These drugs, being more avidly bound to albumin, would displace bilirubin and thus cause kernicterus in infants (39, 40). This process has been given the casual name "bumping." In general, infant liver function reaches adult range by the end of the third week of life (41). Some drugs that may be contraindicated or which may require dose alteration in the presence of immature liver function are listed in Table IV.

TABLE IV

Dosage Adjustments Based On Immature Liver Function

Drug	*Biotransformation Process*	*Dose*
Acetanilid	hydroxylation	*
Aminopyrine	dealkylation	*
Amphetamine	deamination	*
Androsterone	glucuronidation	reduced
Caffeine Sodium Benzoate	glucuronidation	*
Chloramphenicol	glucuronidation	reduced
Estradiol	glucuronidation	reduced
Estriol	glucuronidation	reduced
Hexobarbital	oxidation	*
Menthol	glucuronidation	reduced
Morphine	glucuronidation	reduced
Novobiocin	glucuronidation	*
Phenolphthalein	glucuronidation	*
Salicylates	glucuronidation	reduced
Sodium Benzoate	glucuronidation	*
Sulfonamides	glucuronidation	*
Testosterone	glucuronidation	reduced
Vitamin K	glucuronidation	reduced

*Not recommended for use in newborns

E. *Other Considerations:* Very few reports are available on the possible effect of an immature gastrointestinal tract on drug absorption. However, prediction that drug absorption from the gastrointestinal tract may be altered by maturation may not be unreasonable. This assumption is based on a study which showed a slow absorption rate of riboflavin from the gastrointestinal tract in children as compared to adults (42). Quite possibly, the shorter length of the infant's gastrointestinal tract will be responsible for a shorter transient time. Incomplete development of the blood brain barrier may contribute to the development of kernicterus (43, 44). Clinical observations have revealed that the blood brain barrier is relatively permeable to bilirubin and protein during the newborn period. It has been suggested that antibiotics and other drugs share increased access to the brain during the newborn period (29, 45).

However, it is not possible to make generalizations for all drugs. It has been reported that the same dose of certain drugs on a per weight basis may be metabolized faster by children weighing under 20 Kg. They excreted the drug faster than patients weighing over 20 Kg.

Unfortunately, the present knowledge is based on what is known to occur in the normal patient. In the critically ill patient, the parameters may be entirely different. The traditional methods of determining therapy may be completely altered because of damage to necessary organ systems.

Drugs And The Fetus

The hospital pharmacist must not only be concerned with drugs administered directly to the patient but must also be concerned with drugs administered to the pregnant mother and the nursing mother.

Transfer of drugs across the placental barrier has, which is thought to act like a sieve, most often been considered a passive process (47). Cahen (48) proposed that the placenta behaves as an inert barrier with lipoid properties toward most drugs and that any lipid soluble drug or any drug that crosses the blood brain barrier will readily penetrate the placenta. Schanker (49), while essentially in agreement with this view, cautions that there is only a hint that the placenta is lipoid in character. Recently some evidence has been presented which seems to indicate involvement of active transport (50) across the placenta.

Dynamics of fetal circulation may also be involved in the effects drugs may have on the fetus. Even though fetal circulation is not completely understood, it is known that after transport to the fetus by the umbilical vein the blood is circulated through the hepatic system (51). Hepatic metabolism does not begin to develop until late in fetal life and is still not completely functional at birth. Fetal circulation provides a greater percentage of cardiac output to the brain as compared to newborn infants (52). Thus, greater amounts of drugs are received by the brain of the fetus, which could lead to teratogenic effects. The most pronounced adverse effect drugs may produce are fetal defects which are primarily caused during the first trimester.

Drug induced effects that occur after organogenosis, the middle and last trimesters, are likely to be subtle and functional rather than be the cause of gross anatomical defects (53). Consequently, it is often difficult to attribute these adverse effects to a particular therapeutic agent. The effects produced by drugs during this period are likely to cause difficulties after delivery. As much as 20 percent of adverse drug reactions reported in children may be attributed to transplacental passage of drugs administered to mothers (54).

Drugs Excreted In Human Milk

After birth; and during lactation, the child may be subjected to the effects of drugs contained in the human milk. Knowles (55) indicated that nearly all agents received by the mother will be found in the milk. The extent to which drugs are found in the milk is influenced by: (a) the drug's solubility in fats and water, (b) the drug's pKa, and (c) the poorly understood transport mechanism. Drugs ingested by nursing mothers and which are frequently overlooked, such as alcohol, nicotine and over-the-counter medications, may be excreted in the milk. The decision of whether a nursing mother should be prescribed drugs must be reached while weighing the benefits and the hazards. The risk to the child from the drugs excreted in the milk may be high depending on the drug. For example, coumarin derivatives may cause serious bleeding if the dose received is high enough. Knowles (55), however, states that if drug administration is held to essential agents, the instances are few in which breast feeding must be discontinued. It should be remembered that the infant fed on cow's milk is not invulnerable to the effects of drugs as is illustrated by the occasional penicillin allergy that can be traced to milk from a cow treated with penicillin. Table V shows many of the drugs that are excreted in breast milk.

Comprehensive Pharmacy Service

It is clear from this discussion that a sophisticated pharmaceutical service ought to be established for pediatrics based on a highly developed distribution system.

This system is necessary to respond to the demands for a proportionately large number of extemporaneously prepared doses. A study of a decentralized pediatric pharmacy showed that there are many more special doses required on a pediatric unit than on an adult medical unit (56). These special doses require measurements of small doses and special pharmaceutical calculations. If nurses perform these functions on the unit, errors may result. Medication errors may account for as many as 25 percent of all accidents which occur on a pediatric unit (57).

Measurement of small doses and dosage calculations are also necessary for the preparation of intravenous admixture and pediatric formulae. Therefore, the support of an intravenous admixture service is helpful in supplying the demands of a pediatric service. These demands include fluids supplying total parenteral nutrition, small volume fluids and special fluid preparations. The intravenous admixture service has in depth knowledge of clean areas and sterile techniques and could, therefore, take an active role in the preparation of special dietary formulas. This could involve the preparation of special glucose formulas for oral feeding or the addition of fructose or glucose to commercially prepared formulas.

The hospital pharmacist who becomes actively involved in the care of the pediatric patient can participate in drug information services specifically aimed at the pediatric patient, staff development, and training of new personnel.

The hospital pharmacist can also play a vital role in the care of the patient. The ambulatory system must be completely flexible in order to cope with the difficulties which may be encountered which are not usually seen in the adult medical clinics. Therapy for the pediatric patient may be difficult due to his dependence on adults. The child's immaturity makes him unable to communicate his needs. Health practitioners involved with the care of pediatric patients must be fully aware of the subtleties with which the patient communicates symptoms. Fever is not as good an indication of severity of illness in the pediatric patient as it is in the adult. Pediatric patients may run a high fever with mild infections. However, sudden rises in temperature may induce convulsions. Cyanosis, the lack of a cry or changes in the way the pediatric patient feeds may all be symptoms of underlying problems.

Immaturity of the child makes him unaware of certain hazards which exist. The desire of children to ingest anything in sight is well known. Salicylate ingestion represents 25 percent of all calls received by poison control centers (58). Certain ingestions may produce unexpected or accentuated results in children. Alcohol, for example, has been reported to cause severe hypoglycemia in children even after ingestion of as little as 20ml. There is reported a patient death after accidental gin ingestion (59).

The dependence of the child on adults should point out the need for explanation and education of the child's parents. Patient medication compliance has been shown to be low among pediatric patients (60). However, there are indicators that patient compliance among pediatric patients improved when increased emphasis was placed on parent education (61).

Explanation of the need for compliance with a particular therapeutic regimen can be achieved with a multitude of audio visual equipment and/or the development of patient education aids (62). If the patient does not wish

Continued on page 24

TABLE V

Drugs Excreted In Human Milk

- *Antihistamines*
    - Brompheniramine
    - Diphenhydramine
    - Methdiazine
- *Anti-Infective Agents*
  - Antibiotics
    - Chloramphenicol
    - Erythromycins
    - Penicillins
    - Streptomycins
    - Tetracyclines
  - Other Antibiotics
    - Neomycin
    - Novobiocin
  - Antituberculars
    - Amino Salicyclic Acid and Salts
    - Cycloserine
    - Isoniazid
  - Plasmodicides
    - Pyrimethamine
    - Quinine
  - Sulfonamides
    - Sulfadimethozine
    - Sulfamethizole
    - Sulfamethoxazole
    - Sulfapyridine
  - Trichomonacides
    - Metronidazole
  - Urinary Germicides
    - Mandelic Acid
    - Nalidixic Acid
    - Nitrofurantoin
  - Anti-Neoplastic Agents
  - Cyclophosphamide
- *Autonomic Drugs*
  - Parasympathomimetic Agents
    - Ambenonium Chloride
  - Parasympatholytic Agents
    - Atropine
    - Scopolamine
  - Sympathomimetic Agents
    - Ephedrine
    - Pseudoephedrine
  - Skeletal Muscle Relaxants
    - Methocarbamol
- *Blood Derivatives*
    - Diphtheria Antibodies
    - Rh Antibodies
    - Allergens
- *Blood Formation and Coagulation*
  - Anti Coagulation
    - Bishydroxycoumarin
    - Dicumarol
    - Phenindione
- *Cardio Vascular Drugs*
  - Cardiac Drugs
    - Quinidine
  - Hypotensive Agents
    - Reserpine
- *Central Nervous System Drugs*
  - General Anesthetics
    - Alcohol
    - Chloroform
    - Cyclopropane
    - Ether
  - Analgesics and Antipyretics
    - Acetaminophen
    - Aspirin
    - Codeine
    - Dextropropoxyphene
    - Heroin
    - Mefenamic Acid
    - Methadone
    - Morphine
    - Oxyphenbutazone
    - Phenacetin
    - Phenylbutazone
    - Pyrazolone
    - Sodium Salicylate
  - Anticonvulsants
    - Diphenylhydantoin
  - Psycho-Therapeutic Agents
  - Antidepressants
    - Imipramine
  - Tranquilizers
    - Chlorpromazine
    - Hydroxyzine
    - Phenaglycodol
    - Prochlorperazine
    - Reserpine
    - Trifluoperazine
  - Respiratory and Cerebral Stimulants
    - Caffeine
    - Amphetamine
    - Dextroamphetamine
  - Sedatives and Hypnotics
    - Amobarbital
    - Bromides
    - Chloral Hydrate
    - Ethinamate
    - Methohexital
    - Phenobarbital
    - Secobarbital
- *Diagnostic Agents*
  - Roentgenography
    - Iopanoic Acid
- *Electrolytic, Caloric and Water Balance*
  - Replacement Solutions
    - Sodium Chloride
  - Diuretics
    - Aminophylline
    - Thiazides
  - Irrigating Solutions
    - Sodium Chloride
- *Expectorants & Cough Preparations*
    - Codeine
    - Levopropoxyphene
- *Eye, Ear, Nose and Throat Preparations*
  - Anti-Infectives Antibiotics
    - Chloramphenicol
    - Erythromycin
    - Neomycin
    - Sulfonamides
    - Tetracycline
  - Anti-Inflammatory Agents
    - Cortisone
- *Gastro Intestinal Drugs*
  - Cathartics
    - Aloin
    - Calomel
    - Cascara
    - Danthron
    - Phenolphthalein
    - Senna
  - Emetics and Antiemetics
    - Prochlorperazine
- *Hormones and Synthetic Substitutes*
  - Adrenals
    - Cortisone
  - Contraceptives
    - Estrogen
    - Progesterone Combinations
    - Parathyroid
    - Calcium Chloride
  - Thyroid Anti-Thyroid
    - Iodine
    - Iothiouracil
    - Methimazole
    - Propylthiouracil
- *Radio Active Agents*
    - Iodines
    - Sodium Chloride
- *Spasmolytic Agents*
    - Aminophylline
    - Papaverine
- *Skin Preparations*
  - Keratolytic Agents
    - Sulfur
- *Vitamins*
    - A Oleovitamin
    - B_{12} Cyanocobalamin
    - C Ascorbic Acid
    - D Dehydrocholesterol
    - E Alpha-tocopherol
    - K Menadiol Sodium Diphosphate
    - Folic Acid
    - Niacin
    - Pantothenic Acid
    - Riboflavin
    - Thiamine
- *Unclassified Drugs*
    - Arsenic
    - Copper
    - Lead
    - Magnesium
    - Mercury
    - Potassium
    - Sodium
    - Sulfur

NOTE: Drugs Categorized according to the American Hospital Formulary Service

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Continued from page 22

to be serviced by the hospital's ambulatory pharmacy, the hospital pharmacist can function as an information link to the patients community pharmacist. The hospital pharmacist can explain drug therapy while the patient is hospitalized as well as the purpose of discharge medication. Hopefully increased efforts with regard to patient education will improve patient compliance.

Even though there are now pharmacists who specialize in pediatrics, these specialists are still too few in number. Therefore, the hospital pharmacist must assume the responsibilities of service to the pediatric patient. The hospital pharmacist should be ready to assist in (a) dose alteration to meet the needs of the patient, (b) preparation of individualized doses, (c) patient counseling (d) patient education and (e) family education.

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CANCER TREATMENT—Cancer treatment research has a three-pronged strategy according to the National Institutes of Health: understanding cancer at the molecular level, developing new anticancer drugs, and improving the quality of total therapy.

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Joint MSHP—BMPA Meeting

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OF HOSPITAL
PHARMACISTS

Upper left—Phil Miller, Chairman Central Unit Dose Pharmacy, explains University of Maryland unit dose system to tour group. Center left—Pearl Walsh, Chairman I.V. Admixture Program, discusses the University of Maryland sterile support service to pharmacists on tour. Upper right—M.S.H.P. President Paul Burkhart (right) presents check to Joseph Fallon, Chairman S.C.O.D.A.E. (left). Lower left—R. David Anderson addressing joint M.S.H.P./B.M.P.A. meeting. (left to right) Mel Rubin, President B.M.P.A., V. de Paul Burkhart, President M.S.H.P. and Mr. Anderson. Lower right—Mel Rubin, President B.M.P.A., extends greetings to joint meeting.

Maryland Society of Hospital Pharmacists

On January 9, 1975, the Maryland Society of Hospital Pharmacists held its first joint meeting with the Baltimore Metropolitan Pharmaceutical Association at the University of Maryland Hospital. More than 200 community and hospital pharmacists attended the meeting. Attending, also, were representatives from the Faculty of the School of Pharmacy, the Maryland Pharmaceutical Association, the Board of Pharmacy and the American Society of Hospital Pharmacists.

R. David Anderson, Chairman of the House of Delegates of the American Society of Hospital Pharmacists, was the guest speaker for the meeting. Mr. Anderson called attention to the fact that in order to meet the demands of the expanding scope of practice it will be necessary that individual practioners, both hospital and community, identify with specific aspects of practice. Mr. Vincent de Paul Burkhart, President of the M.S.H.P. presented a check to Mr. Joseph Fallon, Chairman of the Student Committee on Drug Abuse to support student activities regarding drug abuse in the community.

Following the meeting there were guided tours of the Department of Institutional Pharmacy Programs at the hospital. Tours included the centralized and decentralized (Patient Care Pharmacies) unit dose systems, the I.V. Admixture Program, Drug Information Center, specialized Dose Preparation Division, Syringe Filling Lab and Ambulatory Pharmacy.

Both organizations are planning to continue to have joint meetings on an annual basis.

American Society of Hospital Pharmacists 1975 Continuing Education Programs

April 17-20 — Advanced Institute on Therapeutics for Clinical Pharmacists — San Francisco, California

April 20-24 — 32nd Annual Meeting — San Francisco, California

April 26-May 11 — 8th Annual ASHP International Clinical Study Tour, Japan and Hong Kong

May 1-2 — American Hospital Association — ASHP Joint Conference — Chicago, Illinois

May 18-21 — Institute on Principles of Hospital Pharmacy Management — Memphis, Tennessee

June 22-27 — Institute on General Practice of Hospital Pharmacy — Denver, Colorado

July 20-23 — Institute on Unit Dose Drug Distribution Systems — Seattle, Washington

July 24-27 — Institute on Intravenous Therapeutics and Admixture Services — San Diego, California

ACA Midyear In Dallas May 16-18, 1975

The Midyear Meeting of the American College of Apothecaries will be held at the Statler Hilton Hotel in Dallas, Texas, May 16-18, 1975. This year's meeting will take an interdisciplinary approach to providing continuing education. Practicing physicians, dentists and pharmacists will take part in the program which includes discussion on drug interactions, poison control, patient monitoring and hypertension screening.

The activities will begin on Friday morning, May 16 with an ACA Board of Directors Meeting. On Friday afternoon the Admissions Committee will be conducting interviews, and on that evening, the ACA officers will host a reception. Saturday's program includes a hypertension screening workshop conducted by Guy Robinson, FACA. Mr. Robinson is sponsoring a project which brings a mobile unit around to citizens of Sierra Vista, Arizona to check for possible hypertensive patients. Also on the program is a dental-pharmacy workshop conducted by Clifford Ochsenbein, D.D.S. and Pharmacist, Gary Hancock. Dr. Andres Goth, a professor of medicine at Southwestern Medical School will discuss drug interactions and Dr. Harold Trammel of the University of Tennessee College of Pharmacy will discuss the use of poison control information resources. In addition, Mr. Orville Ward, Vice President of the Safeco Insurance Company, will be on hand to cover the topic of tax sheltered income. Saturday's evening activities include a reception and banquet with guest speaker Dave Braden, a well-known Dallas humorist.

The Sunday morning session will be devoted entirely to the subject of monitoring drug therapy in the long-term facility. This three-hour program has been developed by the American Pharmaceutical Association and should prove to be most informative not only to pharmacists providing services to extended care facilities, but to any pharmacist who monitors patient drug therapy.

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Nathan I. Gruz, Editor
Maryland Pharmacist
650 West Lombard Street
Baltimore, Maryland 21201

LAMPA News

The Greeks have a word for it, "poly ariston" which translated means "greatest." Such were the comments about the meeting of the Ladies' Auxiliary of the Maryland Pharmaceutical Association held on Monday, February 3, 1975 at The Yardstick Fabric Shop in Perry Hall, Maryland. About 32 members were present, in the spacious private quarters of The Yardstick for the short business meeting, which preceded our program. We were pleased to welcome two new members: Mrs. Thelma E. Startt and Mrs. Doris Palmer.

Mrs. Agnes Tzomides, owner of The Yardstick, was our speaker. On the podium, colorfully surrounding her were two tables covered with hand crafted items, such as pillows, patchwork quilts, rag dolls, knitting bags, embroidered stoles as well as attractive long gowns. It was an appropriate setting for "Miss Agnes" whose subject was "LET'S BE CREATIVE." It didn't take long for her charisma to take over, as she talked about her philosophy of mind-heart-body; her life, past and present and clothes. We also met one of her daughters, Sandy, who manages one of their stores. Mrs. Jerri Miller, a friend and customer, modeled clothes she had made and gave up a real Paris showing! Her choice of fabrics was haute couture, expertly constructed and beautifully accessorized. We all wished we were relatives, or just Mrs. Miller's size. An eye appealing and delicious tasting buffet, which included homemade Greek delicacies, was prepared by our president, Arlene Padussis and her aunt, Peggy Padussis. Three of our members attended with their daughters: Camilla Ogrinz and daughter Cordelia (Cordy), Arlene Padussis and daughter Mrs. Annette Kassolis, and Bernice Sama and daughter Mrs. Jackie Ey.

The spirit that pervaded the entire meeting was so warm and festive. And we were so engrossed with the program, we forgot to give away the door prizes. However, names were drawn later from among those attending and Jean Levin, Mary Mills and Kay Nelson were the lucky winners of $5.00 gift certificates. We all agreed, you sure can have fun in a fabric shop!

—Ann Crane

Irvin Goodman Honored For Community Work

Irvin Goodman, MPhA member in Westminster, was named first recipient of Western Maryland College's Century Club Award at the college's annual Century Club dinner.

Dr. Ralph C. John, President of Western Maryland College, made the presentation on behalf of the trustees, faculty and students. He commended Mr. Goodman for his commitment to the welfare and progress of the community. Mr. Goodman is a member of the Carroll County General Hospital Board of Directors, Chairman of the Hospital joint conference committee and recipient of community service recognition certificates from Carroll County Heart Association, Big Brothers, Kiwanis, YMCA, Lion's Club, and the City of Westminster.

Baltimore Veteran Druggists' Association

The following officers for 1975-76 were installed.

President: Christopher A. Rodowskas, Sr.
1st Vice President: Samuel A. Jeppi
2nd Vice President: H. Nelson Warfield
Secretary-Treasurer: Benjamin F. Allen

Membership is open to persons who have been pharmacists for twenty-five years or more.

School of Pharmacy

Dr. John J. Sciarra who received his Ph.D. from the University of Maryland and had a distinguished career as teacher and researcher at St. John's University College of Pharmacy has been named Dean of Long Island University's Brooklyn College of Pharmacy.

A graduate of St. John's University College of Pharmacy and Allied Health Professions, Dr. Sciarra returned to his alma mater in 1957, after having completed his doctoral studies at the University of Maryland School of Pharmacy to join St. John's University's Department of Pharmaceutical Chemistry. For the next 17 years he distinguished himself as a teacher and as a researcher and has acquired international fame in his specialty of Aerosol Science and technology.

Dr. Sciarra was cited as "an outstanding pharmacist, professor and researcher, one who personifies the ideals of service and integrity in his profession and who has dignified his calling in the eyes of his associates."

Alan L. Settler, a native of Baltimore, former MPhA member was recently appointed a member of the National Wholesale Druggists Association's Pharmaceutical Committee. Mr. Settler is General Manager of Humiston-Keeling & Co., wholesale druggists of Milwaukee, Wisconsin. He is a graduate of the University of Maryland School of Pharmacy and the son of Baltimore pharmacist, Martin Settler.

Wedgwoodmen, Happy Without Women

by Samuel P. Jeppi

The Wedgwood Club, this year is preparing to celebrate, its 75th Anniversary with a banquet. While discussing plans at a recent meeting, a member timidly suggested to break our precedent by inviting ladies as dinner guests on the night of the banquet. In the flash of a second, sedate, professional and gentle men became obstreperous spectators berating an umpire. Had there been a policeman in the neighborhood, the turmoil that ensued probably would have prompted him to radio the riot squad to standby. A member reminded the group never to forget or betray the many renowned deceased predecessors of the club. He recalled Dr. Alfred R. L. Dohme of Sharp & Dohme; Dr. George Bunting, the originator and founder of the Noxzema Company; Dr. Henry Hynson, and Dr. James W. Westcott of Hynson, Westcott & Dunning; and John F. Hancock. These famous men maintained a strictly stag club. He continued, "Let us never vitiate our present quarters, this being our 75th anniversary we may consider having a banquet away from our normal surroundings at a different hour and with the ladies. This could be regarded as a supplemental, unofficial meeting and, after all, it can't happen again until 75 years hence; and hell, since we won't be around it won't matter."

The Wedgwood Club is a paradox. It can be described as a highly disorganized successful organization. One cannot argue with its continued success. Its membership is limited, to join the club there have been times when a prospect has had to wait for a member to die.

Wedgwood is non-profit, non-political, non-commercial, non-philanthropic, non-munificient, often non-sense type of organization. At the meetings, there is no head table no podium, no speaker, no commercials and no honorarium. Its membership is derived basically from the pharmaceutical profession and includes allied industries. The club has no president, no vice president, no sargeant-at- arms, and no one desires to officiate. It does have a diligent secretary, Joseph J. Hugg, Executive Vice President of the Calvert Drug Company. Historian, Edward W. Piper, an illustrious member, is compiling a history of the club for publication in the near future. He solicits any information pertaining to deceased members. At a meeting which begins at 2:30 P.M. and may end at midnight, one can meet a pharmacist, a hospital director, a chain store official, a head of a business, a fountain company executive, a medical representative, photo supply proprietor, a professor, a bank treasurer, a drug company detail man and a health department administrator . . . Never a woman.

But for the distaff canon, the club has a few rules that are generally superficially observed, except for a brief period at the annual business meeting. A Wedgewood man may regard the chore with repugnance, however, he must MC a meeting every five or six years, depending upon his name's alphabetical position. If a member's birthday falls during the month of a scheduled meeting, he is obliged to arise and render "Happy Birthday." His voice may not embody the rhythmic combination of tones and melody, he may emanate cacaphonous sounds, but sing he must. He will be rewarded with an appropriate memento after receiving the bronx cheers. The organization is dedicated to loyal, sincere fellowship. It enjoys fine food, wine, song and rainbow jokes.

For years the club met in the Wedgewood Room of the Emerson Hotel. Later Frater Mannie Hendler hosted the club at the millionaire's estate "Harlequin On The Severn," where many happy days were spent. The men would swim, pitch horse-shoes, and stroll through the beautiful botanical gardens. Others would play cards, chat or quaff draft beer in the replica saloon in the basement of the club house "cabin" located in the cobble stone paved area. Depending on the season, the chef would prepare oyster roasts (oysters actually roasted), crab feasts, bull roasts and sugar corn was served, which was picked from nearby fields, then boiled in huge vats suspended over burning logs.

After Mannie's death the club explored and patronized several meeting places in and around Baltimore, and finally located in the present hospitable club room of Brentwood Inn. At 2:30 p.m. on Wedgewood day, members and guests stroll into the club room. Groups will form around tables for card games, others will linger at the cocktail bar. Several will nibble on hors d'oeuvres, others will swap·jokes or stories while sipping their drinks. At all times there prevails a spirit of conviviality, relaxation and informality. At approximately 6:30 p.m. all are seated for dinner. A typical meal begins with a bowl of oyster stew, a tossed salad, assorted rolls, potatoes, greens and the chef's masterpiece of culinary juxtaposition: a savory tender lobster nestled next to a juicy thick steak and coffee served throughout the meal. For dessert a large piece of homemade cake topped with mounds of ice cream. And, finally, a big cigar for everyone.

In time, the designated MC will call for attention. If he is fortunate, perhaps his request will be honored within a short period. An old-timer recalls the evening when, at a prearranged signal, the entire group gravely walked out of the room, treading softly and with solemn funeral march silence. They returned a half hour later smiling.

Two months ago, to the surprise of the designated MC, who had just called for attention, the club exploded into a simulated miniature Democratic National Convention.

Every State, beginning with Alabama was vociferously represented. As a bonus, territories and unofficial areas demanded recognition. The proceedings were more circus-like than the original political convention.

At all meetings, after the MC gains attention, and decorum prevails, he will welcome guests and make a couple of announcements—ill members, etc. He will recognize birthdays, present gifts and finally call for "volunteer stories". The meeting is conducted without speeches and always informally. At this point a few men are restless and the air is thickly polluted with tobacco smoke, so someone will make a motion to adjourn.

Once again, certain groups will form to play cards, sip or swap stories. Perhaps a few will leave the inn, reluctantly, to return to their homes and wives.

Washington Spotlight For Pharmacists

What Is A "Dangerous Drug"

In a recent New Mexico case, the State Board of Medical Examiners revoked the license of a physician on the ground he had violated a probationary condition of his license.

In July, 1970, the Board of Medical Examiners had found the physician guilty of nonprofessional conduct on the ground that he had unlawfully prescribed meperidine when the drug was actually for his own use. The physician admitted before the Board that he had habitually and excessively used the drug. The Board, however, reinstated the license on an indefinite probation basis on condition that the physician obtain psychiatric care and not have in his possession any "dangerous drugs."

Two years later, the Board initiated action to again revoke the license on the grounds the physician had obtained and was using methylphenidate—alleged by the Board to be a "dangerous drug"— in violation of his probation.

When the Board revoked his license the second time, the physician appealed to the courts where a trial court overturned the Board's action on the ground the term "dangerous drugs" was so vague as to render the Board's action unlawfully "arbitrary". The Board appealed to the Supreme Court of New Mexico which reversed the trial court and reinstated the Board's revocation action stating "the members of the Board are better qualified than this court to decide" whether methylphenidate is a "dangerous drug". In this situation, it is clear that the court was not prepared to substitute its judgment for that of an expert administrative agency even though opinions might differ as to the actual dangerous character of the drug involved.

Barbiturates Rescheduled

The Drug Enforcement Administration has issued guidelines to clarify the proper scheduling of three barbiturate formulations, DEA Administrator John R. Bartels, Jr., announced.

Bartels said that the drug products were mistakenly being sold as Schedule III products under the Controlled Substances Act, when they should have been handled as Schedule II substances subsequent to the reclassification to that category of amobarbital, pentobarbital and secobarbital.

The confusion was attributed to misinterpretation by the manufacturers of the appropriate regulation (21 C.F.R., 1308.13 (c) (1)).

The drug products and manufacturers are:

Sedadrops
  Merrell-National Laboratories
  Cincinnati, Ohio
Infadorm
  Reid-Provident Laboratories
  Atlanta, Georgia
Ruck-Sed Liquid
  Rucker Pharmaceutical
  Shreveport, Louisiana

Ruck-Sed tablets are properly sold as Schedule III items.

The following procedures have been established by DEA for Sedadrops, Infadorm and Ruck-Sed liquid:

1. The firms will sell remaining stocks as a Schedule III product, with all mislabeled products sold or disposed of by April 1, 1975.
2. The firms agreed to discontinue manufacture of the mislabeled formulation as of December 16, 1974.
3. The firms agreed to reformulate the products as a Schedule III or Schedule IV product with proper labeling.
4. All of the products on hand at all levels of distribution which have not been reformulated must comply with Schedule II controls as of April 1, 1975. This includes Schedule II controls for prescriptions, inventories, order forms and *ARCOS* reporting. Until April 1, 1975, these products may be treated as Schedule III items at all levels of distribution.
5. *ARCOS* (Dea's Automation of Reports and Consummated Orders System) will treat these products as non-reportable items until April 1, 1975, at which time any existing stocks must conform to the *ARCOS* Schedule II reporting requirements.

In addition, Sedalixir may still be found in some stocks labeled Schedule III. This product is now a Schedule II substance, but was discontinued by Merrell-National in 1969. It should be handled as a Schedule II item in all instances.

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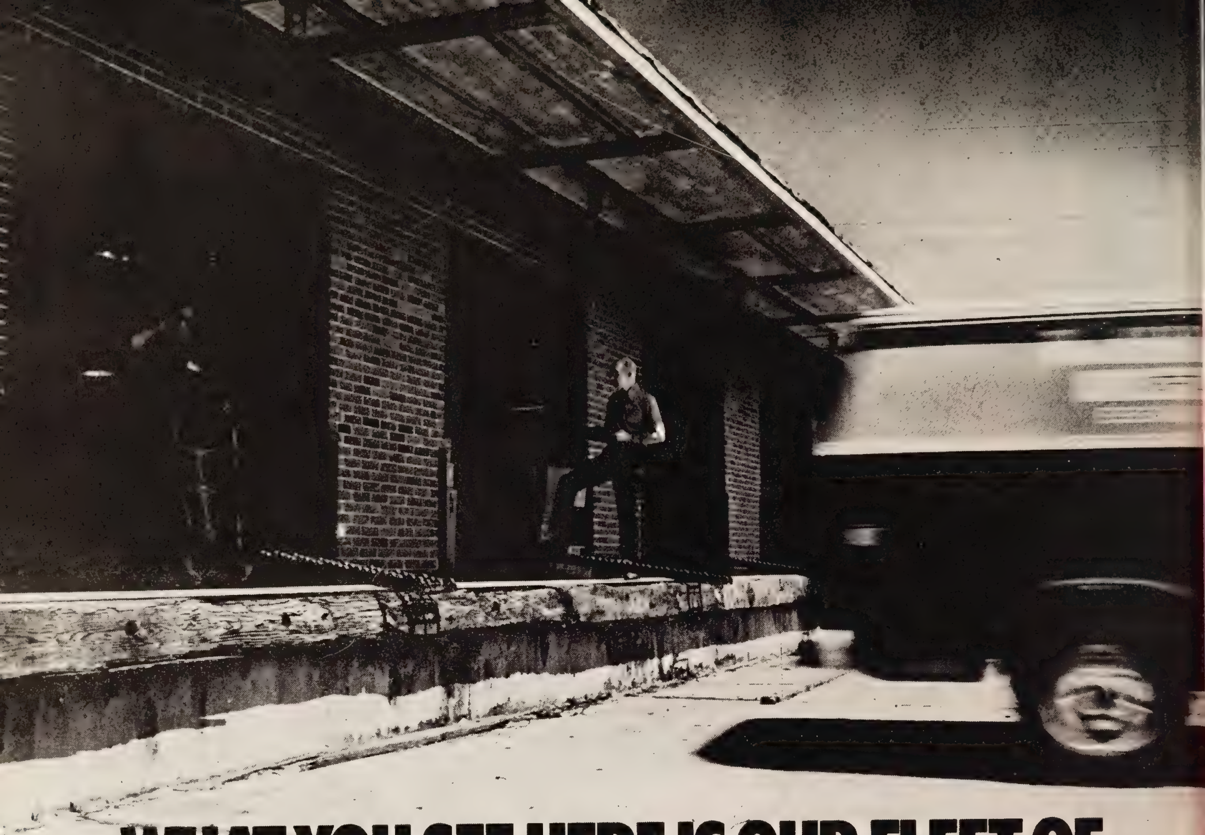

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Ibuprofen—
An Evaluation

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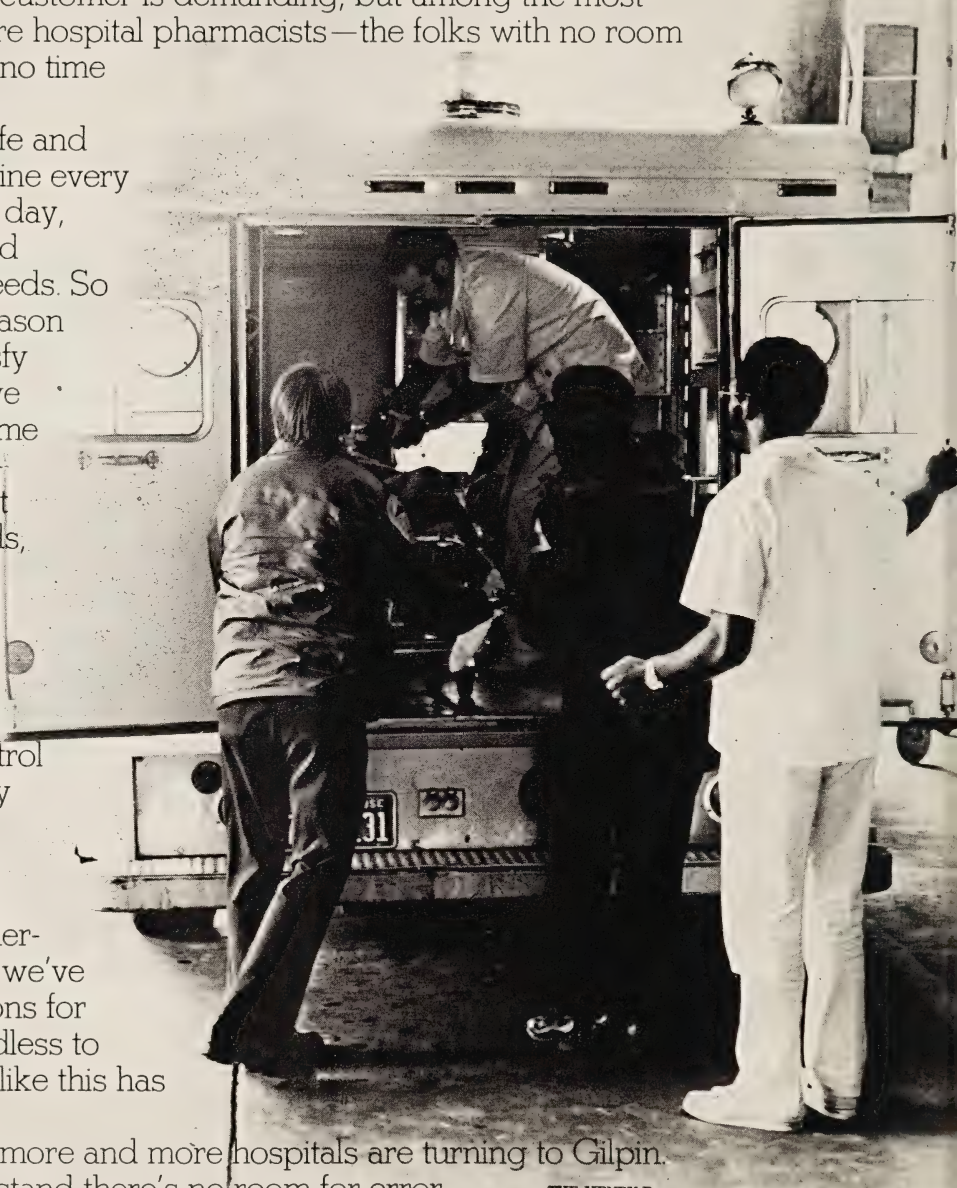

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MARCH 1975 VOL. 51 NO. 3

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editorial

Continuing Education and Demonstrated Competence

More and more professions in more and more states have had laws enacted mandating fulfillment of continuing education requirements for relicensure. In Maryland, physicians had such a law passed several years ago. The Maryland Pharmaceutical Association has had enabling legislation introduced, but because of differences regarding the proposals, the Association has had the proposals stopped before enactment.

The period between now and the next legislative session in January 1976 provides all of us with an opportunity to reassess the interrelated issues of continuing education and competence.

All fields of endeavor have been undergoing accelerating rates of knowledge explosion resulting in new patterns of professional practice. This has been particularly true of the health professions and has been painfully apparent for pharmacy practice.

For example, whereas a short time ago there were the disciplines of pharmacy and pharmacology, today we have psychopharmacology, pharmacokinetics, biopharmaceutics and clinical pharmacy to name but a few of the areas of differentiation or innovation in recent years.

Since the founding of the Maryland Pharmaceutical Association in 1882, the Association has been concerned with professional education. It has been involved in advancing progressively higher educational standards within university education leading to licensing as a pharmacist. In addition, MPhA presents educational programs at its Annual Meeting and regional meetings.

Almost two decades ago, MPhA initiated the Robert L. Swain Pharmacy Seminar to present an opportunity for professional continuing education. This was followed by the Simon Solomon Pharmacy Economics Seminar concerned with the management and economic aspects of pharmacy practice.

The University of Maryland School of Pharmacy cosponsored many of the Swain Pharmacy Seminars and in recent years has developed an expanding continuing education program which is constructively meeting many important needs of practicing pharmacists.

The many excellent opportunities, including those provided by the Maryland Society of Hospital Pharmacists, APhA and ASHP, unfortunately have failed in two respects. First, there are still many pharmacists who do not avail themselves of educational opportunities and second, there is no coordinated effort to plan and evaluate "CE" in Maryland.

To meet the need for a comprehensive look at continuing education and continuing competency in the state, MPhA is setting up a special committee. Representatives of the School of Pharmacy, the Maryland Board of Pharmacy and the Maryland Society of Hospital Pharmacists will be invited to participate.

The objectives of the committee will be to determine the goals of CE in relation to present and future pharmacist roles, assess existing CE opportunities in light of these goals and recommend possible solutions to achieve these goals.

Associated with this process is the problem of continuing competence. In addition, the projected committee could contribute greatly to the advancement of the pharmacy as a health care profession by seeking means of maintaining and evaluating the competency of practitioners.

With the growing interest of government and laymen in the quality of service of health care practitioners, all facets of pharmacy should unite in efforts to assure high standards of pharmaceutical practice.

—Nathan I. Gruz

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Hilton Inn—Pikesville

June 25-26, 1975

Wednesday, June 25

Morning

General Business Session

House of Delegates Meeting

Luncheon—Address: "Future Shock—Pharmacy 1975"

Afternoon

Professional Continuing Education Program:

Co-Sponsored by the APhA Academy of General Practice of Pharmacy.

Professional Experiences Workshop covering: selling the advantages of the professional fee, continuing competence in pharmacy practice, patient compliance, considerations in selecting prescriptions containers, and building a working relationship between local pharmacy and medical societies.

Thursday, June 26

General Business Session

Necrology

Election of Officers and Board of Pharmacy Nominees

House of Delegates

Cocktail Party and Annual Installation Banquet and Dance

All members are urged to attend and participate in making decisions for their profession.

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maryland board of pharmacy

BOARD EXAMS
JUNE 18, 19, 20

The Maryland Board of Pharmacy will conduct an examination for registration as Pharmacist at the School of Pharmacy, University of Maryland, 636 West Lombard Street, Baltimore, Maryland.

ON WEDNESDAY, THURSDAY AND FRIDAY
JUNE 18, 19 AND 20, 1975

The examination will begin at 8:00 A.M. each day. Applications must be in the hands of the Board by Friday, June 6, 1975.

Pharmacy Changes

The following are the pharmacy changes for the month of March:

New Pharmacies

Thrifty-Wise, Arthur K. Solomon, Pres.; 20 Kingston Road, Baltimore, Maryland 21220.

Asbury Village Clinical Pharmacy, Richard L. Matheny, II, Pres.; 301 Russell Avenue, Gaithersburg, Maryland 20760.

Changes of Ownership, Address, Etc.

Q and B Pharmacy, Inc., Ralph T. Quarles, Pres., (Change in corporation); 2217-19 Pennsylvania Avenue, Baltimore, Maryland 21217.

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Consumers Pharmacy #72, Eric Waldbaum, Pres.; 6854 New Hampshire Avenue, Takoma Park, Maryland 20012.

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Nathan I. Gruz, *Executive Director*

March 6, 1975

- Communications included those from APhA Director, William S. Apple, commending MPhA staff for efficiency and cooperation regarding membership records input; membership dissatisfaction regarding Rx insurance contracts administered by PCS; NARD response on MAC proposals and FTC position on prescription drug advertising; APhA memo on federal wage and hours laws.

- President Freiman reported on conference with Delegate Maurer on a Prescription Price Posting bill. Attended the BMPA banquet and Executive Committee. Met with MSHP Board of Directors regarding Continuing Education legislation. Testified at legislative hearings in Annapolis. Met with the group called by Dean Kinnard regarding continuing education. Participated in MPhA Consumer Affairs Committee meeting and a conference with Read's executives.

- Treasurer's Report indicated 1975 dues arriving at a better rate than in 1974.

- Executive Director Gruz reported major time and effort was devoted to legislation including conferences with legislators, hearings and meetings. Among activities were: BMPA banquet and Executive Committee meeting. Participated in hearing on regulations for physicians' assistants, defending the proposal to prohibit delegation of dispensing authority to physicians' assistants. Meetings included: Consumer Affairs Committee, Board of Pharmacy, Swain Pharmacy Seminar, Read's executives. Attended Joint Peer Review where guidelines were approved and are now ready for review and action by respective organizations. Addressed Prince Georges-Montgomery County Pharmaceutical Association meeting. Attended testimonials to Delegates Linton and Arnick. Visited convention sites. Completed arrangements for workshop on monitoring drug therapy.

- Convention. Convention Chairman Lubman and his committee arranged for the MPhA convention to be at the Hilton Inn in Pikesville, June 25-26. Reservations are now being received for the London Seminar Trip in July, and arrangements are being made for a trip to Mexico City and Acapulco in January 1976. The Regional meeting arrangements were set for April 17, Holiday Inn, Frederick.

- Legislative Committee — Mr. Rubin reviewed the status of various bills and reported on hearings. Mr. Parker moved for MPhA to seek amendment of HB 257 on Continuing Education to the original form. Seconded by Yaffe and passed.

- Medicaid — Mr. Rubin reported on conference with state officials regarding acquisition cost. He also reported on the federal MAC proposals. Action on federal proposals and regulations are being held up because of many diverse views.

- Swain Seminar — Mr. Gruz outlined the program on Patient Medication Record Systems.

- Public Relations — arrangements for observance of National Poison Prevention Week on radio, TV and newspapers was presented by Mr. Gruz. Fliers on "Is Your Home Poison Proof?" are being distributed through members.

- MPhA-APhA Workshop on monitoring drug therapy. Program for April 10 was reported on by Mr. Gruz.

- Bicentennial Observance — The professional schools of the University of Maryland will each be assigned a day of observance. Maryland Pharmaceutical will be participating in the Pharmacy Day. In addition, October 1975 will mark the 50th Anniversary of the *Maryland Pharmacist.* There will be a special souvenir and directory issue.

- Maryland Board of Pharmacy — There has been no change in the status of the Secretary of the Board who has been reassigned from Division of Drug Control.

- Mr. Sandel reported on the Prince Georges-Montgomery County Cancer Seminar scheduled for April 6 and urged all to attend.

New Members

The following is a list of the new members approved at the March 6, 1975, meeting of the Board of Trustees of the Maryland Pharmaceutical Association:

Bernard Konopko, Potomac, Organon, Inc.
Stuart Axelrod, Silver Spring, Drug Fair
Vincent Gattone, Easton, Lif-O-Gen, Inc.
Stephen Boykin, Baltimore, University of Maryland (Pledge)
Earl M. Towers, Jr., Denton, Edgehill Pharmacy
Royal Smith, Baltimore, Harris Pharmacy

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MPhA COMMITTEE ON DRUG EVALUATION—*

First Report

IBUPROFEN—AN EVALUATION

Ibuprofen (Motrin, Upjohn) is a new nonsteroidal agent advocated for the treatment of arthritic conditions including rheumatoid arthritis, degenerative joint disease, ankylosing spondylitis and osteoarthritis. It is a phenylakanoic acid derivative. It is the first of a number of new nonsteroid antiarthritic drugs which are used in Europe and Canada and which will probably be marketed shortly in the U.S.

Pharmacokinetics

Peak therapeutic blood levels are reached within 30 minutes after a single oral dose on an empty stomach and decline to sub-therapeutic levels in five hours. Food does affect the serum levels in that studies have shown the levels are lower and attained more slowly (two to three hours) than when taken with food.

The drug is excreted mainly by the kidneys and studies have not shown the ability to accumulate.

Review of Clinical Studies

Many studies have been performed comparing ibuprofen with several conventional anti-inflammatory agents such as aspirin, indomethacin, phenylbutazone and prednisone. Most studies have dealt with comparing its effects to that of aspirin.

A significant problem with several of these studies was that the trials involved small patient samples or were conducted for very short periods of time.

In general, ibuprofen has been shown to be better than placebo as an anti-inflammatory and analgesic agent. Some studies have also demonstrated that this agent possesses anti-rheumatic action similar to that of aspirin while other authors feel its action is less powerful than that of salicylates in studies of a similar nature.

This agent has been proven to be less potent than phenylbutazone and indomethacin as an anti-inflammatory agent. The anti-inflammatory activity of Ibuprofen at a dose of 600 mg. was found to be no better than placebo in one trial and slightly better than placebo in another trial. In another study Ibuprofen 1200 mg. daily was shown to be effective, but less so than indomethacin 75 mg. daily. In another study there was shown to be no difference in anti-inflammatory and analgesic activity detected between Ibuprofen 600 mg. daily and Phenylbutazone 300 mg. daily.

A review of the studies in rheumatoid arthritis pointed out that three trials found Ibuprofen 400-1200 mg. daily to be superior to placebo in the control of pain. Another found 900 mg. daily to be no better than placebo. In seven other trials Ibuprofen 300-1200 mg. daily was considered to have similar analgesic activity to aspirin (2.4-4 G. a day) and in three trials it caused a lower incidence of gastrointestinal effects.

The anti-inflammatory activity of ibuprofen in early studies was not detectable in man. However, recent studies have shown it to be as effective as aspirin in anti-inflammatory potency, with indomethacin and phenylbutazone being more potent.

In the treatment of osteoarthritis, one trial showed Ibuprofen to be no better than placebo, slightly better than placebo, as good as aspirin and in another study 1200 mg. per day was shown to be effective, but less so than indomethacin 75 mg. per day.

In long term treatment of rheumatoid arthritis the studies have been lacking in good therapeutic results with one study reporting a lack of effectiveness in one-third of the patients on 600-800 mg. daily. Recent reports indicate that doses of at least 1600 mg. and up to 2400 mg. per day are needed for anti-inflammatory activity.

Side Effects—Gastrointestinal

Reported work suggests that ibuprofen produces a lower incidence of gastrointestinal intolerance compared with other drugs used in the treatment of Rheumatic diseases. Long term experience is required however to define this lesser incidence.

Gastrointestinal side effects have been reported, but the incidence based on acute studies seems to be less than that with other anti-inflammatory agents in equivalent doses.

In one review a group of forty-two patients known to have peptic ulceration were given Ibuprofen 600 to 800 mg. daily for an average of ten months. The drug was well tolerated in 33 and in 9 the ulcer symptoms were exacerbated. It must be remembered, however, that this dosage is one-half the commonly recommended dose of 1600 mg. per day.

Recent endoscopic evaluation of the effects of non-steroidal anti-inflammatory agents on gastric mucosa demonstrated gastric mucosal abnormalities with all drugs

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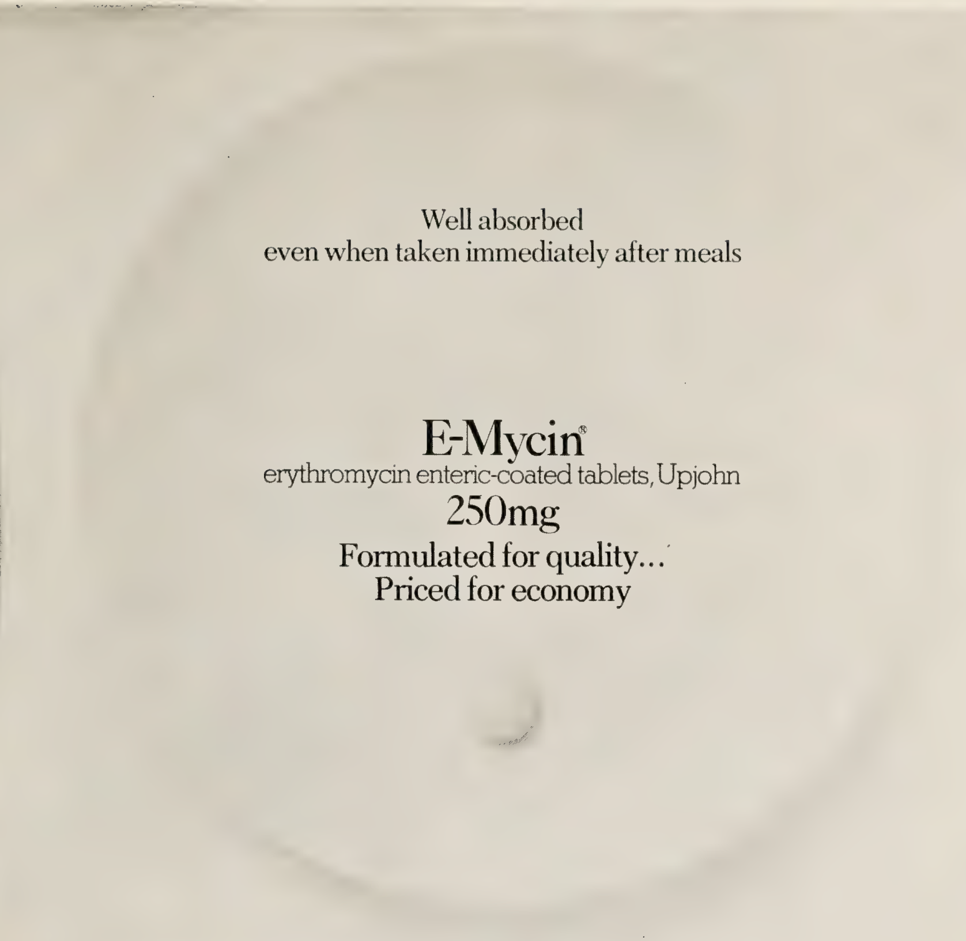
*Thomas S. Sisca, Pharm. D., Chairman; Ralph F. Shangraw, Ph.D.; Kenneth Sumida, R.Ph.; Vincent de Paul Burkhart, R.Ph.; Berry Means, R.Ph., M.S.; Ex-officio, Paul Freiman, R.Ph.; Nathan I. Gruz, R.Ph., Secretary. Recommendations for candidate drug products for evaluation and comments on this report are invited.



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Contraindication: Contraindicated in patients with known hypersensitivity to erythromycin.

Warning: Safety for use in pregnancy has not been established.

Precautions: Erythromycin is principally excreted by the liver. Caution should be exercised in administering the antibiotic to patients with impaired hepatic function. Surgical procedures should be performed when indicated.

Adverse Reactions: The most frequent side effects of erythromycin preparations are gastrointestinal, such as abdominal cramping and discomfort, and are dose-related. Nausea, vomiting, and diarrhea occur infrequently with usual oral doses. During prolonged or repeated therapy there is a possibility of overgrowth of nonsusceptible bacteria or fungi. If such infections occur, the drug should be discontinued and appropriate therapy instituted. Mild allergic reactions such as urticaria and other skin rashes have occurred. Serious allergic reactions, including anaphylaxis, have been reported.

Treatment of overdose: The drug is virtually nontoxic, though some individuals may exhibit gastric intolerance to even therapeutic amounts. Allergic reactions associated with acute overdosage should be handled in the usual manner — that is, by the administration of adrenalin, corticosteroids and antihistamines as indicated and the prompt elimination of unabsorbed drug, in addition to all needed supportive measures.

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studied (aspirin 3.6 Gms. per day, Indomethacin 100 mg. per day, Phenylbutazone 500 mg. per day, Ibuprofen 1200 mg. per day). They consisted mainly of edema, erythema, submucosal petechial hemorrhages and erosions. Most severe were seen with aspirin, and indomethacine and least severe with Ibuprofen and Phenylbutazone.

A recent review of world wide clinical experience with Ibuprofen demonstrated gastrointestinal intolerance with Ibuprofen requiring cessation of therapy in 9% of patients compared to 25% with aspirin.

The amount of gastrointestinal bleeding caused by Ibuprofen (up to 1800 mg. per day) appears to be less than that of aspirin in most acute studies. There have, however, been reports of gastrointestinal bleeding with Ibuprofen.

Little or nothing can be concluded from the short term data and only long term experience with the drug will prove if in fact the gastrointestinal intolerance is less than that of aspirin.

Miscellaneous Side Effects

CNS complaints such as headache, and giddiness can occur. Diarrhea, vomiting, skin rashes and edema are also reported.

Hyperuricemia and elevated liver enzymes have been reported.

Ocular Side Effects—Two case reports of amblyopia associated with Ibuprofen have been reported.

Use in Gastrointestinal Risk Patients

Several studies have shown the ability of patients with peptic ulcers to tolerate Ibuprofen in 75% of the patients at a dose of 600-800 mg., who had previously developed gastrointestinal side effects from other agents. However, this dose is half the present recommended dose of 1600 mg.

Precaution

Although reported to be well tolerated this agent should still be used with caution in patients with peptic ulcer or history of serious recent gastrointestinal problems.

Administration

Ibuprofen tablets are rather large for the dose of drug administered and some patients have reported trouble in swallowing them. Although they are sugar coated to cover possible burning after taste, they can be crushed prior to administration. Some unpleasant taste may be experienced.

Dose

Doses ranging from 600-1600 mg. per day have been studied, but apparently 40 mg. four times a day is the most effective dosage.

Conclusions based on Literature Reviews

1. Ibuprofen is better than placebo as an analgesic and anti-inflammatory agent.
2. Ibuprofen is comparable to, but probably not as effective as equivalent doses of aspirin.
3. Ibuprofen appears to be less irritating than aspirin in short term acute studies, however peptic ulceration, hemmorrhage, and bleeds have been reported. Long term studies and useage at 1600 mg. doses are needed to definitely prove this possible advantage.
4. Ibuprofen offers no therapeutic advantage over aspirin except for possible decrease in side effects. However, if given with antacids the side effects of aspirin can probably be decreased.
5. One indication for this agent would be the arthritic patient who cannot tolerate adequate doses of aspirin due to gastrointestinal intolerance and who has been tried on supportive antacid therapy. If a patient has failed to benefit therapeutically from adequate doses of aspirin, ibuprofen will offer no therapeutic advantages.
6. Ibuprofen should be used with the same caution as aspirin, indomethacin, or phenylbutazone in patients with peptic ulcer and gastrointestinal intolerance.
7. This agent is indicated in those patients who have demonstrated allergic reactions to aspirin or in whom side effects prevent administration of adequate doses of aspirin.
8. Recent information indicates that dosages of 1600-2400 mg. per day of ibuprofen are at least as effective as aspirin; however, the safety at such high doses has not been adequately defined, especially in long term usage.

Price Comparisons Per 100 Tablets

Source: Drug Topics Red Book 1975

Ibuprofen (Motrin, Upjohn) 300 mg.	$10.00
Phenylbutazone (Butazolidin, Geigy)	$ 7.73
Acetysalicilic Acid (Aspirin, U.S.P.)	
Bayer	.96
Upjohn (2.62/M)	.42
Norwich	.37

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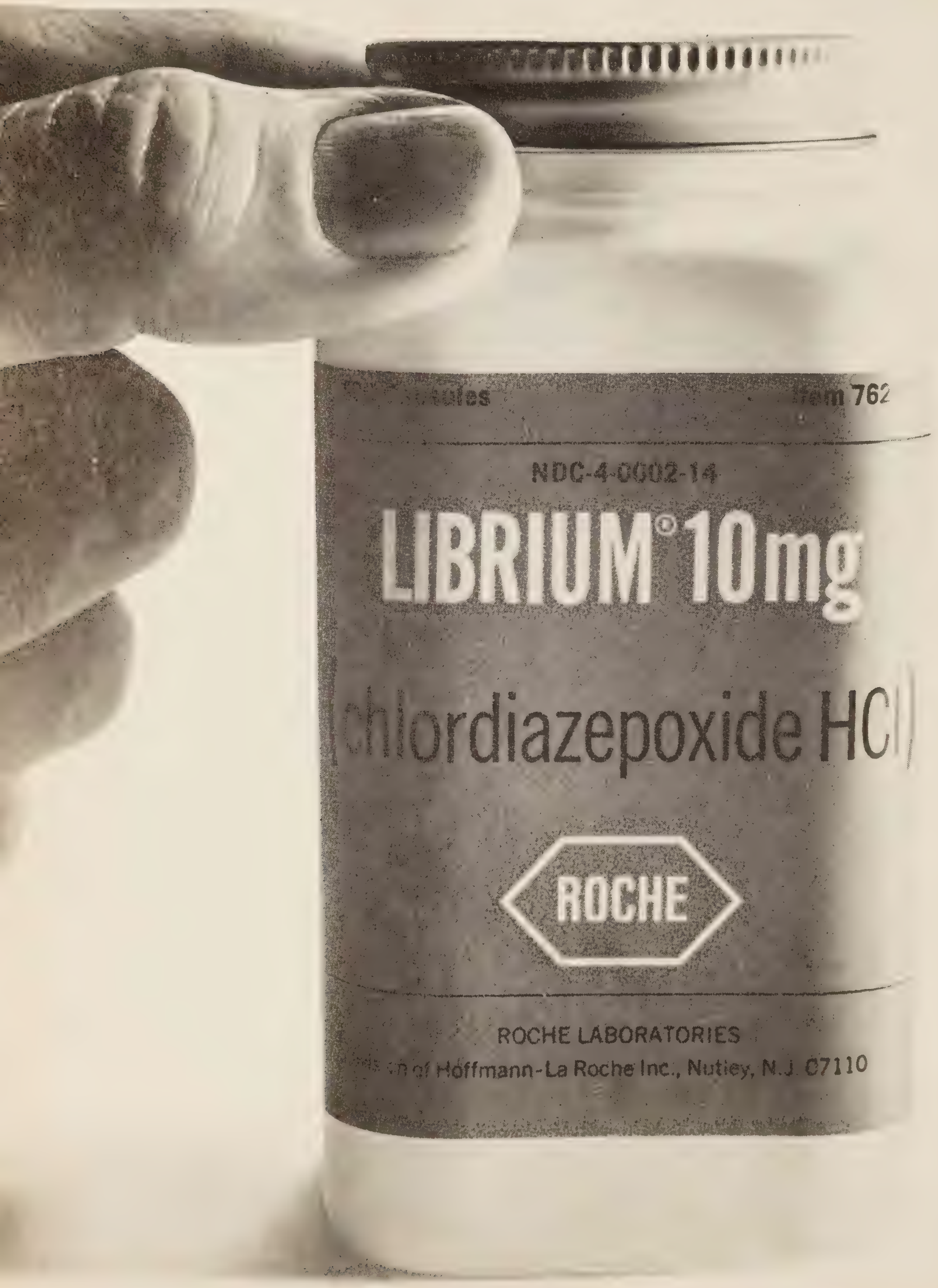
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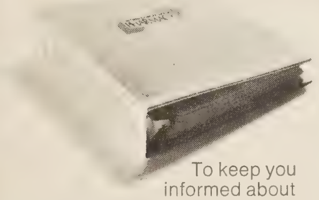
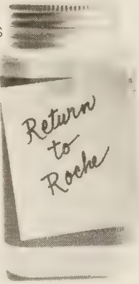
For questions requiring an immediate answer, our Medical Emergency Line (201-235-2355) provides a direct, round-the-clock telephone service for specific questions on Librium (chlordiazepoxide HCl) and other Roche products. In addition, our information specialists are prepared to answer inquiries of lesser urgency by mail. Through your Roche representative, you can also obtain a variety of informative materials, *e.g.*, scientific brochures, reprints and bibliographies.

The New Environment of Pharmacy



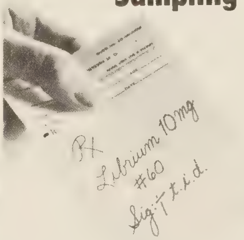
To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy*, will keep you continuously informed on a wide range of pertinent subjects—new governmental regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, N.J. 07110.

Liberal Return Goods Policy



Roche understands the difficulties that a busy pharmacist has in maintaining a proper inventory. Prescription demand for Librium (chlordiazepoxide HCl) tends to minimize any expiration problems for this product. For other Roche products that may be outdated or discontinued, the Roche return-goods policy expedites replacement and enables you to keep your stock up to date.

No Unsolicited Sampling



Roche—the *first* pharmaceutical house to discontinue routine sampling to physicians—believes that the dispensing of drugs by the pharmacist contributes to better control of drug usage.

And the Roche commitment to product excellence is your assurance of uniformly high quality.

Librium

(chlordiazepoxide HCl)

5 mg, 10 mg, 25 mg capsules

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

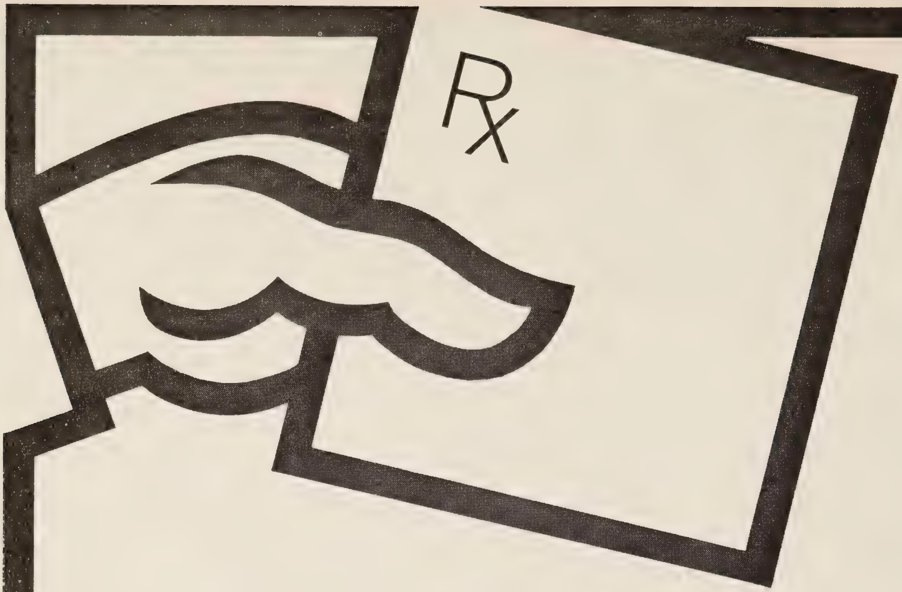
Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110



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U.S.P. Drug Defects Report

A. *Foreign Material*

Pint size bottles of rubbing alcohol were recalled as a result of a report from a hospital pharmacist in Alabama that sediment was present in the bottom of the bottle. An inspection revealed that approximately 50 gallons of the alcohol had been placed in a 55 gallon drum that had previously held mineral oil and which had not been cleaned.

B. *Foreign Material*

A hospital pharmacist from Idaho reported reddish-brown specks floating in a vial of Potassium Chloride Injection. The manufacturer checked the retained samples of the product and found the same reddish-brown specks. The foreign material was identified by the firm to be an iron salt and the firm recalled the product. Although the product had been distributed nationally, this one Drug Product Defect Report was the only report the company had of the problem.

C. *Failed Compendial Test*

A South Carolina pharmacist reported that several of his patrons reported no coloration of the urine after taking a urinary analgesic containing an AZO dye. (He even went so far as to try it himself.) The Food and Drug Administration checked out the tablets and found they failed compendial disintegration tests. The tablets were recalled.

D. *Product Mixups*

A report from an Iowa hospital pharmacist noted that unit doses of methaqualone were labeled as containing 150 mg per tablet on individual cellophane packages, but in fact the tablets were the 300 mg size. The firm checked their remaining stock of this package size and lot numbers and confirmed that a label mix-up had occurred in some boxes.

A recall of this package size was instituted by the company the same day the pharmacist's report was received. As the firm stated in a letter to the USP, "We do appreciate your effort in alerting pharmaceutical firms to potential or actual problems which may arise or have occurred with their marketed products. In this particular instance, Mr. X's alertness and his initiative in reporting the problem did result in prompt corrective action on our part."

E. *Summer's Heat Affects Cream*

The defect report from an Iowa community pharmacist, who described a cream utilized in prescription compounding as having a "soup-like consistency and grainy texture instead of the usual thick creamy texture", received immediate action from the company. The lot was manufactured in June, and the firm believed that the extreme heat of the next few weeks had cracked the emulsion while the product was in storage or in transit. The entire lot was recalled from their wholesalers and the firm is reviewing its formulation.

F. *Hydralazine Hydrochloride Ampuls Recalled*

Black particulate matter in hydralazine hydrochloride injection reported by a number of hospital pharmacists resulted in an investigation by the manufacturer. The particulate matter was reported to be a by-product of the basic drug. Neither sterility nor potency were affected. The firm asked pharmacists inspect each ampul in their stock and return any found to contain particulate matter. Future packaging will contain a statement that each ampul must be inspected to insure that there is no particulate matter.

G. *OTC Preparation*

A precipitate in a popular OTC nasal solution was called to the company's attention by a Wisconsin community pharmacist and resulted in a change in the buffering system to make a more elegant product. The company's letter to the pharmacist noted, "Your diligence in pursuing this matter is appreciated, and is an outstanding example of the contribution which can be made by community pharmacy".

H. *Adhesive in Safety Seal*

A community pharmacist from Wyoming reported receiving an· oral liquid potassium replacement product containing a "stringy" looking precipitate. The firm involved, upon receiving a copy of the DPDR, investigated the problem to determine the possible cause. After lengthy systematic study which included chemical and spectroscopic analysis, they concluded that the precipitate was excess adhesive used to glue the safety seal to the bottle. Their studies showed that the adhesive particles usually are not visible at the time of manufacture. To prevent this problem from recurring, the firm decided to eliminate the safety seal and go to a shrink seal. The firm reports that they have had no further problems of this nature with this product.

I. *Safety Caps Contract*

Although safety closures required on products have elicited many and varied reports from pharmacists all across the country, two liquid products from one manufacturer, usually sold in their original pint size containers, seemed to be the subject of an unusual number of reports complaining about difficulty in opening. The company answered the reports, indicating they were forced to use the caps because they were the only ones available from the industry and that federal regulatory action allowed no further time for testing. Subsequently it was discovered that the caps had a tendency to contract, thereby increasing the tightness above that torque which was initially applied, causing opening difficulty at the consumer level of use. The firm is actively taking remedial steps to correct this situation by reinspecting all stocks in their warehouses and adjusting each cap that shows this defect.

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calendar

May 27 (Tuesday)—University of Maryland School of Pharmacy Alumni Association Annual Alumni Banquet, Eudowood Gardens.

June 6-8—Tenth Annual Hospital Pharmacy Seminar, Maryland Society of Hospital Pharmacists, Sheraton Fontainbleau, Ocean City, Maryland.

June 25-26—MPhA Convention, The Hilton Inn —Pikesville. Installation Banquet and Dance—Thursday, June 26.

July 14-22—MPhA London Tour and Seminar.

August 7 (Thursday)—TAMPA Crab Feast.

October 12-16—NARD Convention—Fountainbleau—Miami.

January 16-23, 1976—MPhA Acapulco-Mexico City Tour.

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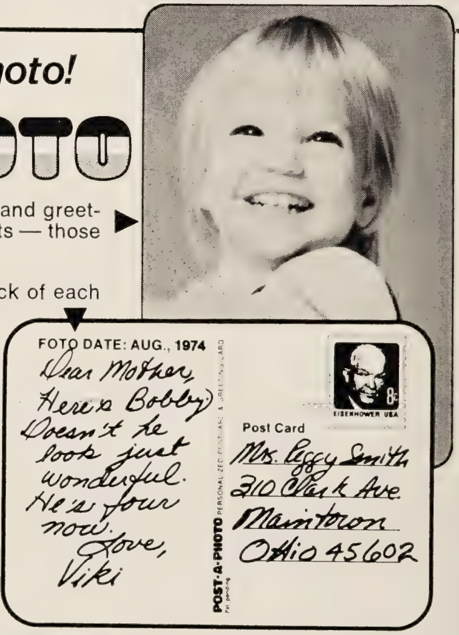

FOTO DATE: AUG., 1974

Dear Mother,
Here's Bobby.
Doesn't he
look just
wonderful.
He's four
now.
Love,
Viki

Post Card

Mrs. Peggy Smith
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Maintoron
Ohio 45602

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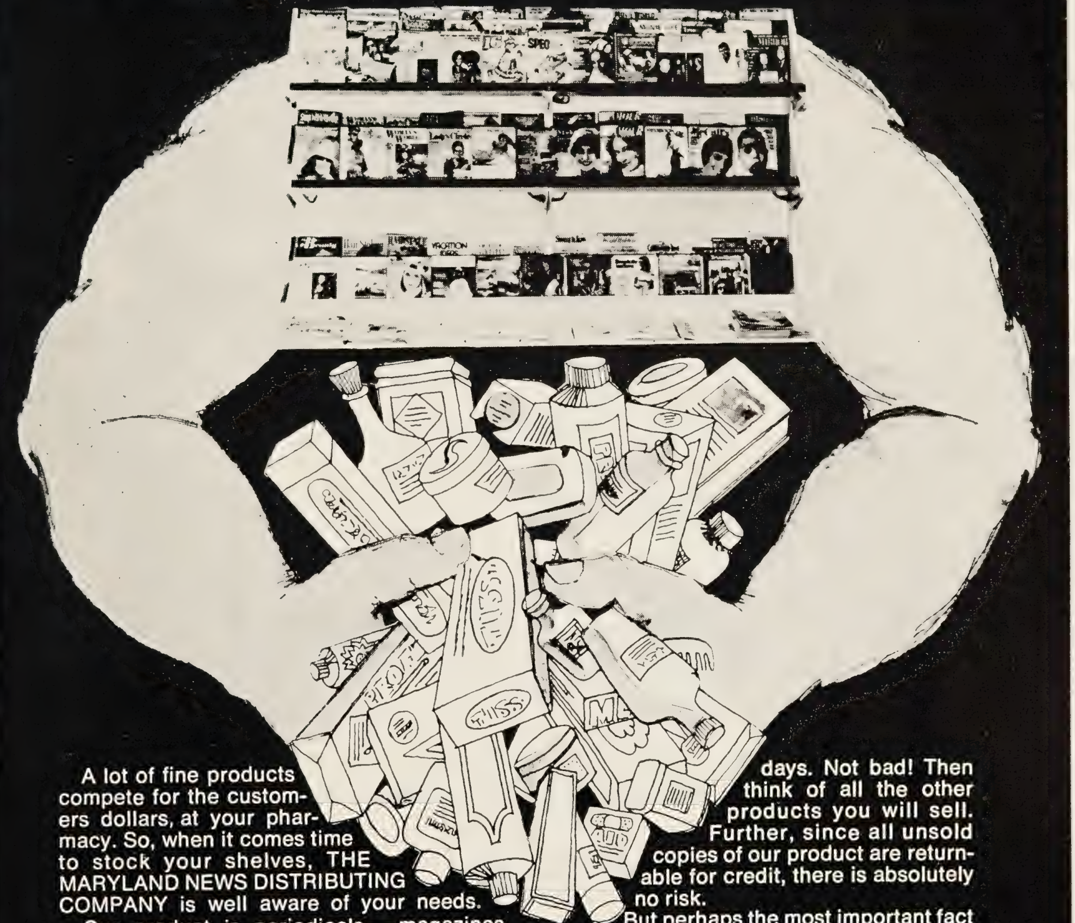

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Maryland Society of Hospital Pharmacists

The March 13 meeting of the Maryland Society of Hospital Pharmacists was held at Mercy Hospital. The business meeting was preceded by a presentation by Mr. Donald C. McAneny, Chief Administrative Officer of Mercy Hospital, who spoke on "P.S.R.O.".

The business meeting was called to order by President Elect Harry Hamet. The minutes of the February meeting were read and approved. The secretary Kent T. Johnson read a letter from President Wilson H. Elkins of the University of Maryland thanking MSHP for its contribution to the School of Pharmacy.

The following persons were voted into membership: Active: John R. Cooney, John R. Contrino; Associate: Clifford Crown, Milton A. Friedman, Raymond M. Kane; Student: Angela H. Ferrari, Joseph M. Ruppel.

Treasurer Telak reported on the checking account balance and the Education Fund balance.

Art Riley gave a report for the Seminar Committee.

Clarence Fortner spoke on the forthcoming Cancer Seminar.

Mary Connelly, chairperson of the nominating committee, presented the following slate of nominees for office for the coming year:

President Elect: Clarence Fortner
Secretary: David R. Chason
Pamela Lindsey
Board of Directors: Allen Jaskulski
Three-year Member: Kent Johnson

Robert Snyder, Chairman of the Legislative Committee, summarized this activity by stating the Continuing Education Bill with the MSHP amendment, the Manufacturer-on-Label Bill, and the Drug Information Bill — all passed in the House of the State Legislature.

The Maryland Society of Hospital Pharmacists announce its 10th Annual Hospital Pharmacy Seminar. The theme of this year's seminar is "Innovation Cooperation and Adaptation." It will be held at the Sheraton-Fontainebleau Inn in Ocean City, Maryland on the weekend of June 6, 7 and 8, 1975.

Anyone interested in further information should contact Mr. Arthur N. Riley, Hospital Pharmacy Seminar Chairman, Pharmacy Department, University of Maryland Hospital, 22 South Greene Street, Baltimore, Maryland 21201.

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news MP

Baltimore Metropolitan Pharmaceutical Association March Meeting

Legislative update was the major theme of the Baltimore Metropolitan Pharmaceutical Association business meeting held Wednesday, March 12, 1975 at the Quality Inn in Pikesville.

The status of all bills in the 1975 legislature affecting pharmacy were reported on. These included: rebates to nursing homes, prescription price advertising, posting of prescription services and prices, continuing education, expiration date on label, codeine on prescription state-wide basis, removal of physician notification in drug product selection and formulary law and amendment of the thirty-day dating limit for new prescriptions.

Committee reports included the Medical Assistance Committee report. The committee is reviewing proposed federal guidelines regarding acquisition cost and maximum allowable cost (MAC) and how it will affect the state medicaid payment system. Other reports concerned the operation of BUST, which is Businessmen United to Stop Trouble, a program involving rewards for information leading to arrest of those involved in crime against pharmacies and other establishments. The BMPA is an active participant with membership on its Board of Directors. Also reported on was how we fit into PSRO. Following announcements of forthcoming MPhA seminars, convention and alumni programs, the meeting was adjourned with refreshments.

DR. PETER LAMY of the School of Pharmacy was elected to membership in the American College of Clinical Pharmacology. He was also elected a Fellow in the American Association for the Advancement of Science and a Fellow in the American College of Apothecaries.

He is Institutional Pharmacy Editor of *The Maryland Pharmacist.*

Eastern Shore Pharmaceutical Society

The Eastern Shore Pharmaceutical Society held an educational and informative meeting at 9:30 P.M., February 12 in the Conference Room of Memorial Hospital in Easton, as reported by Samuel Morris, Secretary. He stated that the recent increase in Medicaid fees was the result of the persistent and diligent work of the Maryland Pharmaceutical Association, which will continue its efforts to secure a more equitable fee. This was pointed out as one of the many benefits of group or Association effort, which includes legislative action, continuing education programs and public relations. A question and answer session concluded the program.

AZO Kappa Chapter

Chapter elections will be held on June 11, 1975 at Suburban House Restaurant.

Joint Installation Brunch will be held on Sunday, June 29, 1975 at 11:00 A.M. at The Tail of The Fox.

Annual Crab Feast is scheduled for Sunday, August 17, 1975 at Gordon's of Pikesville.

Bilingual Pharmacists Needed

The Baltimore Council for International Visitors is compiling a list of bi-lingual individuals who are willing to assist in translating or interpreting for foreign visitors who are having problems with the English language. They would like to add some pharmacists to their list who could be called to help foreign visitors with prescriptions, pharmaceuticals or related matters. Anyone willing to cooperate should call the MPhA office at 727-0746.

Gilpin Reports Increased Sales and Earnings

Mr. James E. Allen, Chairman of the Board and President of The Henry B. Gilpin Company, announced record sales and earnings for the year 1974. Consolidated net sales rose 15 per cent over $55.7 million in 1973 to $64.1 million in 1974. After tax earnings increased 52 per cent to $527,584, or 95¢ per share, compared to $346,764, or 63¢ per share, for 1973.

Founded in 1845, The Henry B. Gilpin Company, with headquarters in Washington, D.C., is a major distributor of health care products through wholesale drug and surgical and hospital supply distribution centers, as well as service merchandising and drugstore operations, in 12 eastern and southern states and the District of Columbia.

During the year, Gilpin entered into an agreement and plan for the merger of the Indianapolis, Indiana wholesale drug firm, Mooney-Mueller-Ward Company, Inc., into The Henry B. Gilpin Company. This expands Gilpin's marketing activities to the Midwest by adding this major drug distributor. Final consummation of the merger will take place during 1975.

Anne Arundel County Pharmaceutical Association

Photos By Paramount Photo Service

At the Anne Arundel County second installation banquet at Friendship Inn—Upper photo, Left to right: Vincent Regimenti toastmaster; Robert Harnish, treasurer; Roberta Van Duzer, secretary; Ben Owens, president; Nathan Schwartz, vice president; Albert Friedman, assistant secretary.

Lower left: President Ben Owens (l.) was installed by MPhA President Paul Freiman.

Lower right: Outgoing president Milton Watkowski (r.) receives past president plaque from President Owens.

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BMPA Banquet

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Upper left photo: President John E. Padousis (right) receives gavel from Installation Officer Charles E. Spigelmire. Lower left: Toastmaster Ronald Lubman (l.) present past president plaque to Melvin Rubin. Upper right: Melvin Rubin (left) receives AZO Double Star Award from AZO president Alan Stoff. Lower right: Executive Director Nathan Gruz reads citation in presentation of Honorary President plaque awarded to Donald E. Kartman.

Photos By Paramount Photo Service

At the Baltimore Metropolitan Pharmaceutical Association 59th Annual Installation Banquet and Dance, February 9 at Blue Crest North, Grand Marshal Charles E. Spigelmire installs officers for 1975. Left to right, standing are: Martin B. Mintz and Barry E. Levin, Executive Committee; Stanley J. Yaffe, Vice President; Frank Rosenberg, Sales Manager, Service Sales Company, substituting for Donald E. Kartman, Honorary President; Ronald A. Lubman, President elect; Milton C. Sappe, Vice President; Melvin N. Rubin, outgoing president and Chairman, Executive Committee; Nathan I. Gruz, Executive Director; Douglas A. Kadan, Executive Committee. Seated are John E. Padousis (right), President and Sam A. Goldstein, a past president who gave the invocation and benediction. Absent: Vice President Ralph T. Quarles; Executive Committee: Dennis Klein, Samuel Lichter, Richard E. Myers and Bernard N. White.

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Prepared by Maryland Pharmaceutical Association

PLAN	COST	PROF FEE	Md. RX ONLY	OTC	BC	INSULIN ON RX	REFILLS	DAY & DOLLAR LIMITS	MISCELLANEOUS
Associated Prescription Services, 305 W. Monument St., Baltimore, Md. 21201 539-0325 No. 01 Balto. Meatcutters #117 02 A&P Engineers 03 RSEU & FELRA H&W 06 Balto. Dept. Stores #692 07 STA-ILA Longshoremen 07A STA-ILA Retirees 10 Heavy & Hwy. Constr. 25 Balto. Bakery Workers 35 RSEU & FELRA H&W 285 Lithographers & Photoeng.	ACQ	$1.95 unless otherwise indicated	Yes	Certain OTCs yes except 07 07A, 10 No	01, 02, 03, 06, 35, 285 yes; cost + 1/2, All Others -No	Yes Cost + 1/2	1 Year	Max. 100 days to $15 - Over $15 Max. 14 days	Only 01 pays for injectables.
Maryland Blue Cross, Inc. 700 E. Joppa Road Towson, Md. 21204 - 494-5397 Motor Regular (As shown on card)	ACQ	2.10	No Yes	No	No	Up to 4 Vials U & C	1 Year	34 day or 100 doses if on specified list	Pays for dependents up to Dec. 31 last year of eligibility. Date on card is issue date - not expiration
Construction Workers Trust Fund and Teamster's Whse. Workers #570 2219 St. Paul St., Balto, Md. 21218 - 235-8760 or 235-2353	AWP	1.85 + 1.00 Comp	Yes	No	No	Cost + 1/2	1 Year	34 day or 100 doses for unspecified chronic illnesses	
ESSKAY c/o MPhA, 650 W. Lombard St., Balto, Md. 21201 - 727-0746	AWP	1.95	Yes	No	No	Yes	Per MD.	No defined limits	Use uniform claim form.
MEDICAID Medical Assistance Oper. Adm., State Dept. Health & Mental Hygiene P.O. Box 1935, Balto, Md. 21203 - 383-2658		Rx $1.95; OTC Cost + 1/2 or U & C	Yes	Yes Cost + 50%	Yes Fee	Yes U & C	2 in 90 days if on orig.	See notes bottom of page	Separate card for each person in family. Original prescription numbers must be used on refill forms.
Local 1199 National Benefit Fund (Hospital) - 310 W. 43rd St., N.Y., N.Y. 10036 212-582-1890	AWP	2.00 + 1.00 Comp	No	No	Yes Prof. Fee	Yes Cost + 1/2	5 in 6 months on orig.	Normally 10 day max., 34 day unspec. chronic cond. stated on RX; 100 doses spec. list maint. $50 up req. pre-authorization	M.D. must sign their form issued to members.
Paid Prescriptions P.O. Box 414 Hackensack, N.J. 07602 201-646-1700 a. Bakers & Confect. Plan 4 b. Carpenters 4 c. D.C. Meatcutters #593 4 d. Local #400 4 e. Pressmen Welf. Fund 4 f. TWUA 4 g. Wash.-Balt. Newsp. Gld 4 h. Wilmington Pub. Schools 4 i. Giant 5 j. Maryland Elec. 5 k. Provident Indemnity 5 l. Pantry Pride-Food Fair 5 m. Rodman Local #201 5 n. Safeway 5	Plan 4 & 5 AWP Plan 2A ACQ	a. thru n. $1.85 / 2.10 o. and p. $1.90 / 2.15 TWUA in Va. $1.90 / 2.15	Plan 4 & 5 AWP Plan 2A No	No	Plan 4 Yes Others No	YES AWP + 1/2	5 in 6 months	Plan 4 & 5 34 days or 100 doses Plan 2A, 34 days except cert. maint. to 100 doses. Plan 4 BC can be 3 months.	Only plans 2A, 4 & 5 in Md., Va., and D.C. listed. Refer to their book for other areas. Age req. on claim form. Group II pharmacies providing certain prof. services get higher fee.

Pharmaceutical Card System (PCS) P.O. Box 20831 Phoenix, Arizona 85036 602-244-9766 #091, 094, 100, 104, 105, 137, 152, 020	AWP	#137 - $1.85 #105 - 1.95 #152 - 2.10 others $2.00 #020 - $2.05	#091, 137,104, 020 - No, Others Yes	Most plans No; See Manual	No	Yes Cost + 1/2		#137 as ordered; #104 34 days or 100 doses; others 34 days or 100 doses spec. list	Only programs based in Baltimore, Washington area listed. See PCS book for other areas - vary greatly.
Pharmaceutical Service Foundation (PSF) 6801 Quad Avenue Balto, Md. 21237 488-2984 (Sinai, Levindale non-union)	AWP	2.00	Yes	No	No	Yes Cost + 1/2	5 in Year	34 day or 100 doses unspecified list	Use uniform claim form.
Prescription Drugs, Inc. (PDI) - 9008 Red Branch Rd., Oakland Ridge Ind. Park, Columbia, Md. 21045 997-3550 Iron Workers #16 Engineers #37 Painters 1- 1473	AWP	1.95	Yes	No	Yes Fee	No Limit Fee	Per MD.	34 day or 100 doses unspecified list	
Prescription Plan Service, Inc. National Maritime Service 126 University Place New York, N.Y. 10003 212-243-7730	AWP	2.00 + 1.00 Comp	Yes	Yes	Yes Fee	Yes Fee	1 If Auth on Origin.	34 days or 100 doses	MD must sign plans form-issued to members.
Travelers Insurance Co. 111-4 Thomaston Avenue Waterbury, Conn. 06708 203-277-0111	ACQ Plan 1 AWP Plan 2	2.05	No	No	Yes	Yes Fee	1 Year	34 days or 100 doses spec. list.	
Union Prescription Plan (UPP) Public Ledger Bldg. Independence Square Philadelphia, Pa. 19106 215-923-7330	ACQ	1.85	Yes	See List	No	Yes Cost + 1/2	1 Year	100 doses. Pre-auth. req. over $15.00	

NOTES: U & C means Usual and Customary price will be paid (not higher than cost + 1/2). Most programs cover dependent on family card up to age 19. Some cover up to age 21-23-25. This is usually embossed on card as C25 or D25 etc. "Specified List" of items that can be dispensed in 100 dose amounts means you must refer to program booklet to see which medicines or which conditions this refers to. Unspecified--your judgement on whether maintenance. BC - Birth Control.

MEDICAID NOTES: OTC Internal medicine - $1.00 minimum total price. Antibiotics - 10 day maximum supply without preauthorization. No refills on antibiotics. Multivitamins - Hexavitamins only if 6 or older without preauthorization. Preauthorization needed for supplies over $5.00, RX or OTC costing over $10. Call local subdivision for preauthorization. May need diagnosis. No dietary supplements, 90 day total medication maximum including refills.

MEDICAID NOTES (Cont'd)

NDC number required. Special NDC numbers if none is on package:

Medical Supp. or non-drug	996-000-00
Non-Legend	997-000-00
Compounded	998-000-00
Legend	999-000-00

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List your local Pre-Auth. telephone numbers below:

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Watch For Additions and Changes Published in the Maryland Pharmacist and MPhA Newsletter

Insert in Space Below

Correct above: "Paid Prescriptions"— in column "Md. Rx only" should be "Plan 4 & 5 — yes," not AWP.

obituaries

C. Edward Pfeifer, Sr.

C. Edward Pfeifer, Sr., a 1924 graduate of the University of Maryland School of Pharmacy, died at the age of 70 after a long illness. From 1927 until his retirement in 1973, he was the owner and operator of the Denhard Pharmacy, at Light and West streets. The pharmacy in South Baltimore retains the outside appearance when it was built in 1890. It is now operated by his pharmacist son C. Edward Pfeifer, Jr.

Mr. Pfeifer's professional memberships included the Maryland Pharmaceutical Association, Baltimore Metropolitan Pharmaceutical Association, NARD, the Baltimore Veteran Druggists Association, and the Wedgewood Club.

A native of Baltimore, he was graduated from Baltimore City College in 1922. He was a charter member of the South Baltimore Boys.

He is survived by his wife, the former Mary Wilson; two sons, John W. Pfeifer and C. Edward Pfeifer, Jr., both of Towson; a brother, Charles M. Pfeifer, of Baltimore, and seven grandchildren.

J. Bernard Mihn, Sr.

J. Bernard Mihn, Sr., 85, a retired 1912 graduate of the University of Maryland School of Pharmacy, died January 11.

American Society of Hospital Pharmacists 1975 Continuing Education Programs

August 24-27 — Institute on Clinical Pharmacy Services — Minneapolis, Minnesota

September 28-October 2 — Canadian Society of Hospital Pharmacists — ASHP Institute on General Practice of Hospital Pharmacy — Montreal, Quebec, Canada

October 19-22 — Institute on Unit Dose Drug Distribution Systems — Myrtle Beach, South Carolina

October 19-22 — Institute on Intravenous Therapeutics and Admixture Services — Myrtle Beach, South Carolina

December 7-11 — 10th Annual ASHP Midyear Clinical Meeting — Washington, D.C.

Washington Spotlight For Pharmacists

DEA Enforcement

Pharmacists have long complained that federal drug law enforcement activities have been directed primarily at pharmacists while prescribers have generally been ignored. Since enactment of the Controlled Substances Act in 1970, however, the record shows that federal officials, the Drug Enforcement Administration and its predecessor the Bureau of Narcotics and Dangerous Drugs, have applied an even hand in their law enforcement activities. An illustrative case involving a physician began in November, 1972.

The physician was indicted for criminal offenses involving illegal distribution of amphetamines. In February, 1973, however, he received a DEA registration. In the criminal case, the physician "plea bargained" an arrangement under which he agreed to plead "nolo contendere" (I do not contest the charges), on condition that he would continue to be able to prescribe generally but would not possess amphetamines in his office.

Subsequently, the DEA commenced an administrative proceeding looking toward revocation of his DEA registration. The physician argued that his prior "nolo contendere" plea did not constitute a guilty plea as the basis on which the registration could be revoked. The DEA administrative law judge rejected this argument and recommended revocation of the registration. The physician appealed.

In a July, 1974 decision, the U.S. Circuit Court of Appeals for the Second Circuit agreed that for purposes of the administrative proceeding the "nolo contendere" plea was to be equated with a guilty plea and that revocation might be implemented by DEA.

Since enactment of the Controlled Substances Act, administrative proceedings involving possible suspension or revocation of prescriber registrations have exceeded similar proceedings involving pharmacists.

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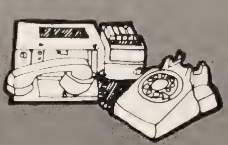

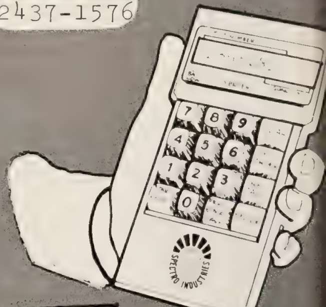

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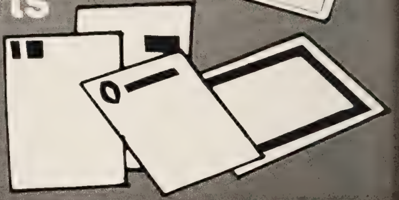

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NO 4

MPhA Legislative Action: Advancing The Public Interest Through Pharmacy

Kinnard and Shangraw Elected to AACP and USP

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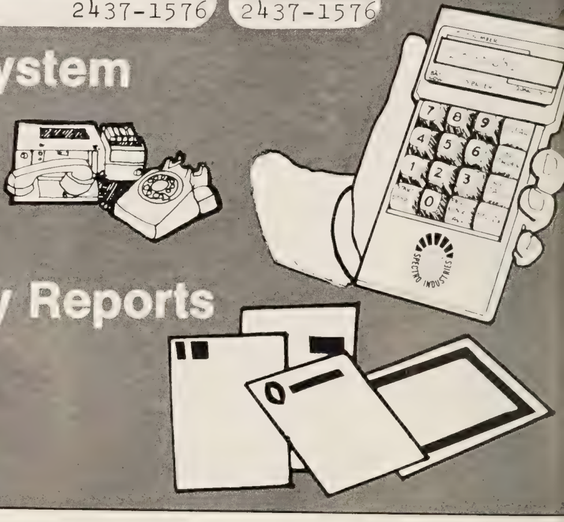

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MPhA Legislative Action 1975: Advancing The Public Interest Through Pharmacy

The area of health is one of the prime concerns of government and it is the legislature that is charged with enacting legislative remedies to problems. These problems may be real or, on the other hand, with little or no basis in fact. As we are well aware, among the aspects of health service receiving a great deal of attention are the practice of pharmacy and the "drugs" that are provided through pharmaceutical services.

The MPhA legislative score card for 1975 showed a high score. Although our bill (H.B. 582) to entirely repeal the requirement to notify the prescriber when a brand exchange is made from the state formulary failed, H.B. 1482 which permitted non-notification for Medicaid patients only was supported by us and was enacted. This will open the way for savings on the cost of the drug component of Medicaid pharmacy services.

A pioneering law that was initiated by MPhA is a requirement that in a pharmacy only a pharmacist or supervised interne may provide information to the public concerning drugs and medicines and their therapeutic values, potential side effects, and uses in the treatment and prevention of diseases.

This function has been in the pharmacy laws as part of the definition of the "Practice of Pharmacy" since 1967. It obviously is essential in the public health interest that the public receives its information and advice about medication only from professionals qualified by education and training to perform this function. With proper implementation of this law the public will experience the benefits of this vital health care service from the pharmacist in the pharmacy.

In the public interest MPhA in 1972 had a bill introduced to require disclosure of the name of the actual manufacturer of a drug product on the label of product. Drug manufacturers succeeded in watering this down to disclosure to the Department of Health. This year we succeeded in obtaining enactment of a law requiring full disclosure on the label.

An MPhA drafted bill (first introduced in 1971) to prohibit the solicitation or receipt of a rebate or commission in the providing of drugs or pharmacy services to a hospital or nursing home was enacted. House Bill 1006 strikes at preferential price offerings by drug manufacturers and distributors to institutions.

After several years of successfully defeating attempts at requiring posting of prescription charges, MPhA following long and careful consideration of legislative, political and consumerism forces decided to try to work out a compromise posting bill. As a result of our initiative, the same kind of bills introduced in former years were recalled or killed and H.B. 1026 was enacted to become operative January 1, 1976. The important differences are: *inclusion of professional and conveniences services;* restriction to 100 drugs, not 150; requirement for regulations as to format, size, list of drugs and so forth to be drawn up by the Board of Pharmacy in *consultation with the MPhA* and the Consumer Council of the Attorney General; exclusion of Controlled Dangerous Substances. Thus the perennial costly and time consuming fight will be put aside along with the allegations of trying to keep information from the public. We believe the constructive effects for pharmacy tend to mitigate this additional intrusion in the practice of pharmacy.

We sought to repeal in its entirety the law prohibiting the dispensing of a prescription more than 30 days beyond the date prescribed, but this was amended to 120 days. Not a full loaf, but a great improvement.

We failed to defeat H.B. 633 to require expiration date on the label, but our efforts resulted in amendments eliminating the need to indicate "expiration date unknown" and also the requirement regarding storage instructions was improved. We will continue our efforts to allow the pharmacist to exercise professional judgment as to appropriate Rx label and other information to the

(Continued on Page 32)

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NATHAN I. GRUZ, *Executive Director*

April 17, 1975

The meeting was called to order by Chairman Padussis at 9:00 A.M. Among communications received were:

- Letters on legislation from Senators E. Homer White of Wicomico County and Newton Steers of Montgomery County.

- Letter of commendation from Dr. David Knapp on new format of Maryland Pharmacist.

- Letter of congratulations from Mrs. Andrew G. DuMez on MPhA leadership and publications.

- President Freiman spoke on the extremely active period which had just been completed especially in connection with legislation. He stated a full report would be given before the House of Delegates.

- Treasurer Lindenbaum—Treasurer's Report indicated dues income ahead of previous year.

- Report of the Executive Director—Announced the election of Dean Kinnard as President-Elect of the American Association of Colleges of Pharmacy and as Chairman of the Board of Trustees of the USP. Reported that President Paul Freiman had been designated Honored Alumnus of the University of Maryland School of Pharmacy. Since last Board meeting, major activities revolved around legislation which monopolized most of Director's time, also approval of the increase of the medicaid fee to $2.00. Reported that the Supreme Court will review state prescription advertising laws and that Wyoming, Connecticut and Massachusetts have considered pharmacy ownership bills.

The Director met with the Governor's aide on health affairs regarding the establishment of a network of local health system agencies for area-wide health planning. The program for the pharmacist's workshop in patient care in long term care facilities and monitoring drug therapy was outlined. Participation in "Hypertension Month" was discussed.

The Director addressed the Notre Dame Preparatory School on pharmacy careers. It was noted that the MPhA Newsletter has received a new, modern format.

- Membership Report—an increase of 10% over the same time last year was reported.

- Convention & Tours—Mr. Lubman reported on the highlights of the convention schedule—The Baltimore Hilton Inn on June 25-26. He also reported on plans for future seminars and tours. On motion of Mr. Rubin, seconded by Mr. Lichter, the proposal for Mexico City and Acapulco for January 16-23, 1976 was approved.

- Mr. Rubin reported briefly on legislation, particularly House Bill 633 on Rx labeling which MPhA requested the Governor to veto, and the status of HB 257 on Continuing Education. For Medicaid, Mr. Rubin reported on conference held on nursing home capitation payment and also on HB 1472 and 1486 which affect Medicaid and drug product selection by eliminating the necessity for notifying the physician. He spoke of the need for the profession to work constructively for the success of these bills and of MAC. A written report was prepared for distribution to the House of Delegates.

- Mr. Rubin brought up the matter of how some firms promote over-the-counter preparations and cited the claims made for Vaseline HEMORRAID.

- Swain Seminar—Mr. Seidman reported that the Seminar was a success both educationally and in point of view of attendance which approached 200. He recommended continuation of a similar format in the future.

- Board of Pharmacy—the situation regarding the uncertain status of the Secretary of the Board since August 1974 was discussed. The consensus was to advise the House of Delegates of the situation.

- Peer Review Committee—Mr. Kamenetz reported that the revised guidelines are ready for the joint MPhA/MSHP committee.

- Advisory Board on Hospital Licensing. As Victor Morgenroth is completing his second term, the following were approved for nominees: 1) Samuel Lichter, 2) Paul Freiman and 3) Victor Morgenroth.

- The meeting recessed at 10:30 A.M. for the House of Delegates meeting and reconvened at 3:45 P.M.

- After a brief discussion of Peer Review, the meeting was adjourned at 4:00 P.M.

New Members

The following is a list of the new members approved at the April 17, 1975 meeting of the Board of Trustees of the Maryland Pharmaceutical Association.

Howard Crystal, Washington, D.C.
Calvin E. Schwartzman, Baltimore, Oken's Pharmacy
Stacy Pass, Baltimore, Chandler's Drugs
Edward Majchrzak, Pasadena, Edwards & Anthony Pharmacy
Willie Sumlar, Washington, Associated Pharmacies & Surgical Supply
Joseph S. Fannella, Baltimore, Union Memorial
William A. Ross, Jr., Baltimore, Provident Hospital
Eugene Jacobs, Randallstown, Sav-A-Lot
Zelick Waganheim, Silver Spring, Seat Pleasant Drugs
Janet Moskitis, Greenbelt, People's Drug Store
Kirit Amin, Silver Spring, College of Pharmacy & Pharmacal Sciences, Howard University
Paul Chorpenning, Jr., Cumberland, Potomac Valley Pharmacy
Raymond Sachs, Lexington Park, St. Mary's Hospital
Max Levin, Randallstown, City Pharmacy
Joseph Loetell, Baltimore, Burriss & Kemp
Norman Sober, Baltimore, Fenwick Apothecary
Charles Alpert, Baltimore, Alpert's Pharmacy
Benjamin S. Rubin, Washington, Medical Park Pharmacy

calendar

August 7 (Thursday)—TAMPA Crab Feast.

September 25 (Thursday) Wedgewood Club, 75th Anniversary Dinner, Blue Crest.

October 12-16—NARD Convention—Fountainbleau—Miami.

January 16-23, 1976—MPhA Acapulco-Mexico City Tour.

RENAL DISEASE—Renal diseases may drastically alter vital kidney functions; when the disease is chronic and progressive, symptoms may ultimately converge into a final common pattern of end-stage disease with irreversible kidney failure and its characteristic symptom uremia, according to the National Institutes of Health.

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[†] OVRAL® each tablet contains 0.5 mg. norgestrel with 0.05 mg. ethinyl estradiol, Wyeth.

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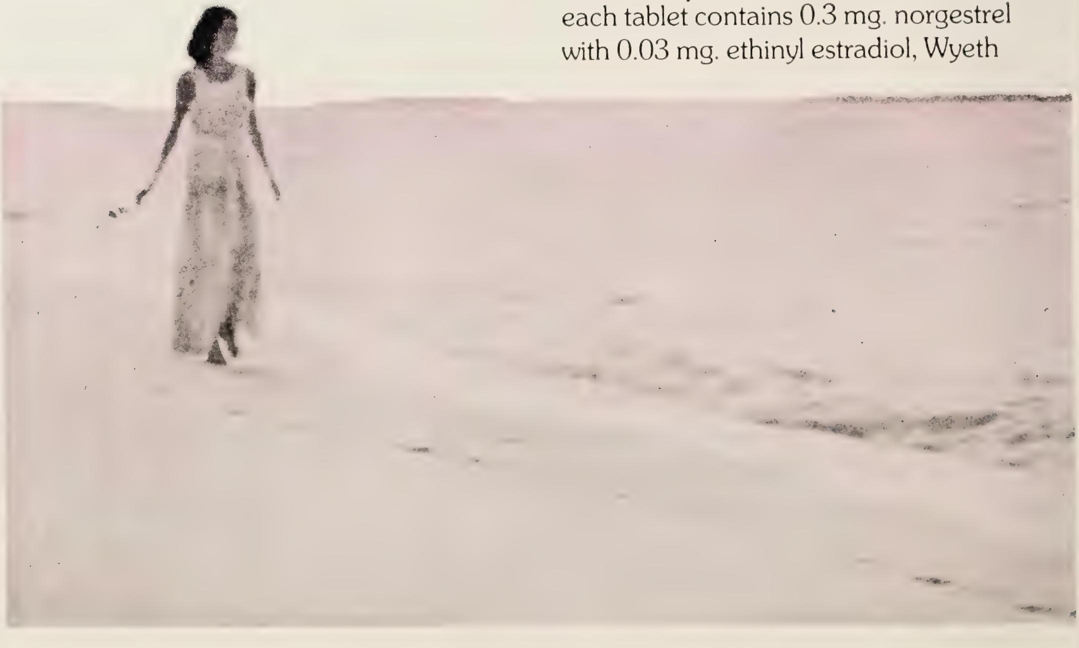


New low dose oral contraceptive.

IN BRIEF.

SPECIAL NOTE: Oral contraceptives have been marketed in the United States since 1960. Reported pregnancy rates vary from product to product. The effectiveness of the sequential products appears to be somewhat lower than that of the combination products. Both types provide almost completely effective contraception.

An increased risk of thromboembolic disease associated with the use of hormonal contraceptives has now been shown in studies conducted in both Great Britain and the United States. Other risks, such as those of elevated blood pressure, liver disease and reduced tolerance to carbohydrates, have not been quantitated with precision.

Long term administration of both natural and synthetic estrogens in subprimate animal species in multiples of the human dose increases the frequency for some animal carcinomas. These data cannot be transposed directly to man. The possible carcinogenicity due to the estrogens can neither be affirmed nor refuted at this time. Close clinical surveillance of all women taking oral contraceptives must be continued.

INDICATIONS: For oral contraception.

CONTRAINDICATIONS: 1. Thrombophlebitis, thromboembolic disorders, cerebral apoplexy, or a past history of these conditions; 2. Markedly impaired liver function; 3. Known or suspected carcinoma of the breast; 4. Known or suspected estrogen dependent neoplasia; 5. Undiagnosed abnormal genital bleeding; 6. Pregnancy.

WARNINGS: 1. The physician should be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, and retinal thrombosis). Should any of these occur or be suspected, the drug should be discontinued immediately.

Retrospective studies of morbidity and mortality in Great Britain and studies of morbidity in the United States have shown a statistically significant association between thrombophlebitis, pulmonary embolism, and cerebral thrombosis and embolism and the use of oral contraceptives. There have been three principal studies in Britain(1-3) leading to this conclusion, and one(4) in this country. The estimate of the relative risk of thromboembolism in the study by Vessey and Doll(3) was about sevenfold, while Sartwell and associates in the United States found a relative risk of 4.4, meaning that the users are several times as likely to undergo thromboembolic disease without evident cause as non-users. The American study also indicated that the risk did not persist after discontinuation of administration and that it was not enhanced by long continued administration. The American study was not designed to evaluate a difference between products. However, the study suggested that there might be an increased risk of thromboembolic disease in users of sequential products. This risk cannot be quantitated, and further studies to confirm this finding are desirable.

(1) Royal College of General Practitioners: Oral Contraception and Thromboembolic Disease. J. Coll. Gen. Pract. *13*:267-279, 1967. (2) Inman, W.H.W. and Vessey, M.P. Investigation of Deaths from Pulmonary Coronary and Cerebral Thrombosis and Embolism in Women in Child-Bearing Age. Brit. Med. J. *2*:193-199, 1968. (3) Vessey, M.P. and Doll, R. Investigation of Relation between Use of Oral Contraceptives and Thromboembolic Disease. A Further Report. Brit. Med. J. *2*:651-657, 1969. (4) Sartwell, P.E., Masi, A.T., Arthes, F.G., Greene, G.R., and Smith, H.E. Thromboembolism and Oral Contraceptives: An Epidemiological Case-Control Study. Am. J. Epidem. *90*:365-380 (Nov.) 1969.

2. Discontinue medication pending examination if there is sudden, partial or complete loss of vision, or if there is sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 3. Since the safety of LO/OVRAL in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to prescribed schedule the possibility of pregnancy should be considered at the time of the first missed period. 4. A small fraction of the hormonal agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long range effect to the nursing infant cannot be determined at this time.

PRECAUTIONS: 1. The pretreatment and periodic physical examinations should include special reference to breast and pelvic organs, including Papanicolaou smear since estrogens have been known to produce tumors, some of them malignant, in five species of subprimate animals. 2. Endocrine and possibly liver-function tests may be affected by treatment with LO/OVRAL. Therefore, if such tests are abnormal in a patient taking LO/OVRAL, it is recommended that they be repeated after the drug has been withdrawn for two months. 3. Under the influence of estrogen-progestogen preparations, pre-existing uterine fibromyomata may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation. 5. In breakthrough bleeding, and in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In undiagnosed bleeding per vaginam, adequate diagnostic measures are indicated. 6. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 7. Any possible influence of prolonged LO/OVRAL therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 8. A decrease in glucose tolerance has been observed in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving LO/OVRAL therapy. 9. The age of the patient constitutes no absolute limiting factor, although treatment with LO/OVRAL may mask the onset of the climacteric. 10. The pathologist should be advised of LO/OVRAL therapy when relevant specimens are submitted. 11. Susceptible women may experience an increase in blood pressure following administration of contraceptive steroids.

ADVERSE REACTIONS OBSERVED IN PATIENTS RECEIVING ORAL CONTRACEPTIVES: A statistically significant association has been demonstrated between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism, cerebral thrombosis.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post-partum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching.

The following laboratory results may be altered by the use of oral contraceptives—hepatic function: increased sulfobromophthalein retention and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine and decrease in T_3 uptake values; metyrapone test; and pregnanediol determination. **Note:** For more specific details on LO/OVRAL, refer to package insert.

HOW SUPPLIED: LO/OVRAL is available in packages of six single-cycle Pilpak® dispensers, each containing 21 tablets.

LO/OVRAL®

each tablet contains 0.3 mg. norgestrel with 0.03 mg. ethinyl estradiol

Wyeth Laboratories
Philadelphia, Pa 19101

Left to right: Gregory R. D'Angelo, Mrs. Estelle Cohen, Dr. Leroy T. Davis, Henry G. Seidman, Paul Freiman, Dr. John Hoopes, Charles Haddon, Jr. and Ronald Kaufman.

ANNUAL ROBERT L. SWAIN PHARMACY SEMINAR

The MPhA Fifteenth Annual Swain Pharmacy Seminar attracted an attendance of close to 200 pharmacists and students on March 20, 1975 at the Quality Inn, Towson. The University of Maryland School of Pharmacy served as co-sponsor this year.

The program was on "Patient Medication Record Systems—Where Do You Stand?" and opened at 9:00 A.M. with exhibits and demonstrations of patient medication computer and manual systems. Henry G. Seidman, MPhA President-Elect and Director of Continuing Education at the School of Pharmacy presided. Greetings were brought by Paul Freiman, MPhA President.

A highlight was exhibitor presentations and demonstrations of manual and computer patient profile equpment.

The luncheon speaker was Dr. William J. Kinnard, Jr., Dean, University of Maryland School of Pharmacy whose topic was "Professional and Legal Responsibilities of Pharmacists in Serving the Patient."

The afternoon program was as follows:

"Physician-Pharmacist-Patient Relations in Drug Therapy Information"

Leroy T. Davis, M.D., Associate Director, Family Practice Programs, University of Maryland School of Medicine.

"The Medication Record"

(Drug history taking, data base, drug information sources, common drug interactions)—John Hoopes, Pharm.D, Instructor, Family Practice Programs, University of Maryland School of Medicine.

"How The Medication Record Works For Me"—

Pharmacists Gregory R. D'Angelo, East Rockaway, N.Y.; Charles Haddon, Jr., Thomson, Ga.; Ronald Kaufman, Philadelphia, Pa. Moderator: Paul Freiman.

Reactor panel of speakers together with Professor Estelle Cohen, Chairman, Department of Consumer Economics, College of Notre Dame of Maryland.

Exhibitor conferences concluded the program. Four continuing education hours and certificate were awarded.

The 1975 Swain Seminar Committee consisted of Chairman, Henry G. Seidman, David H. Ayres, Joseph U. Dorsch, Paul Freiman, John Kenny, Dr. William J. Kinnard, Jr., Melvin Rubin, Dr. Ralph F. Shangraw, George A. Stevenson and Secretary Nathan I. Gruz.

The Annual Dr. Robert L. Swain Pharmacy Seminar was established in 1961 by the Maryland Pharmaceutical Association with a twofold purpose in mind.

First to recognize the many years of dedicated service Dr. Swain devoted to the profession of Pharmacy. The Seminar is a perpetual memorial to a Maryland pharmacist who became a giant in pharmacy, both nationally and internationally. Dr. Swain distinguished himself as a Maryland health official, as Secretary of the Maryland Board of Pharmacy and as Editor of *The Maryland Pharmacist.* He served on the American Foundation for Pharmaceutical Education, the American Council on Pharma-

At the Swain Pharmacy Seminar registration desk: Herman Mendelson, left, with Robert Sinker.

ceutical Education and the Committee on the Pharmaceutical Survey. He was a President of the Maryland Pharmaceutical Association, the American Pharmaceutical Association and the National Association of Boards of Pharmacy. For many years, he was Chairman of the Board of Trustees of the United States Pharmacopeia. Dr. Swain was Editor of *Drug Topics* and *Drug Trade News* for more than 20 years. In 1960 he was named Contributing Editor, a position he held until his retirement in January, 1963. Dr. Swain's death on February 4, 1963 was a great loss to the world of pharmacy.

Secondly, the Maryland Pharmaceutical Association initiated the Swain Seminar in exercise of its responsibility to foster the practice of lifetime continuing education for the profession of pharmacy.

Exhibitors included: Acme Visible Records, Automated Systems Co., Safeguard Business Systems, Unidrug Systems (Drug Package, Inc.).

The Maryland Pharmaceutical Association gratefully acknowledges the important contribution through grants of the following firms to the success of this Seminar: Eli Lilly & Company, McNeil Laboratories, Inc., Merck Sharp & Dohme, Pfizer Pharmaceuticals, Roche Laboratories, E. R. Squibb & Sons and The Upjohn Company.

Somatostatin May Decrease Blood Glucose In Diabetics

A San Francisco scientist has shown that the hypothalamic hormone, somatostatin, acutely decreases blood glucose levels in diabetic patients, presumably by inhibiting glucagon secretion, and thus may prove useful in the management of diabetes.

In 1971 a grantee of the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD) reported that diabetes is characterized by excessive glucagon secretion, in addition to insulin deficiency, and thus may be a bihormonal disorder. (Glucagon, a hormone secreted by pancreatic alpha cells, stimulates the release of glucose from liver glycogen stores and tends to elevate blood glucose levels.) More recently, the present investigators demonstrated that infusion of the hypothalamic "growth hormone inhibiting factor" somatostatin into *normal* human subjects results in a lowering of plasma glucagon and glucose levels.

The investigators now have shown that infusion of somatostatin into *diabetic* patients decreases plasma glucagon levels by 50 percent and plasma glucose levels by 25 percent. Moreover, somatostatin combined with insulin was more effective than insulin alone in diminishing postprandial hyperglycemia, and it is suggested that this hypothalamic hormone, in some longer-acting form, may be a useful adjunct to insulin in the treatment of diabetes.

Photos By Paramount Photo Service

University of Maryland School of Pharmacy

Dean Kinnard and Dr. Shangraw elected AACP and USP officials

Dr. William J. Kinnard, Jr., dean of the School of Pharmacy at the University of Maryland at Baltimore (UMAB), was recently elected president-elect of the American Association of Colleges of Pharmacy (AACP). He is a member of the MPhA Board of Trustees.

The AACP consists of 73 accredited schools of pharmacy. Beginning in June, Dr. Kinnard will be chairman of the AACP House of Delegates. In the summer of 1976, he will become president of the organization.

Dean Kinnard, who also serves as acting dean of the graduate school at UMAB, is currently a member of the AACP Board of Directors and chairman of the Committee on Government Affairs. In addition, he has served the organization as representative to the Association of Academic Health Centers and as a member of the Committee on Internship, the Committee on Education Policies, and the Liaison Committee to the Commission on Pharmacy.

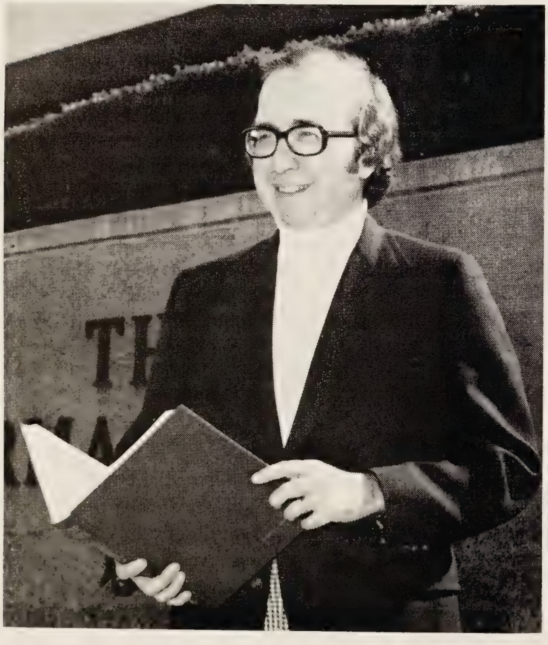
"This election provides national recognition of the efforts of our school to develop an innovative educational program in pharmacy," stated Dean Kinnard.

He received the undergraduate degree in pharmacy and the master of science degree from the University of Pittsburgh School of Pharmacy and the doctor of philosophy (pharmacology) from Purdue University. After teaching at the University of Pittsburgh for 13 years, he was appointed dean of the University of Maryland School of Pharmacy in 1968.

In addition, the U.S. Pharmacopeial Convention elected Dr. Kinnard chairman of its Board of Trustees. At the same time, Dr. Ralph F. Shangraw, chairman and professor of pharmacy at UMAB, was reelected to the General Committee of Revision.

The U.S. Pharmacopeial Convention sets standards that govern the use and manufacture of all drugs in this country. These standards are published every five years in the *United States Pharmacopeia (USP)*. The 19th Revision of the *USP* will be official July 1, 1975.

Dr. Shangraw has served on the Executive Committee of the Revision Committee for the last five years and also serves as chairman of the Formulations Committee.



Dr. William Kinnard, Jr.

Alumni Association March Dinner Meeting

The 1975 Annual March Dinner Meeting of the Alumni Association, University of Maryland School of Pharmacy, was held at the Mercantile Club of Baltimore on Sunday evening, March 16th. More than 225 alumni and friends were in attendance. A reception and dinner was followed by a presentation to Mr. Irving I. Cohen from the School of Pharmacy for his dedicated efforts in the establishment of the Robert L. Swain Model Pharmacy by the Maryland Pharmaceutical Association in the Dunning Hall of the University and for his many services over the years on behalf of pharmacy in Maryland. The presentation was made by Dr. Ralph Shangraw, Dr. Peter Lamy and Mr. Henry Seidman on behalf of the School. A plaque will be attached to the Swain Model Pharmacy in commemoration of this event.

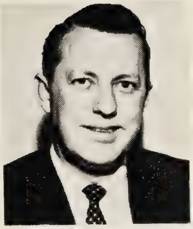
The speaker of the evening was Neil Solomon, M.D., Ph.D., Secretary of the Maryland Department of Health and Mental Hygiene. His topic was "Fat on the Outside, Skinny on the Inside." This was followed by a question and answer period.

Mr. Charles Tregoe, President of the Alumni Association presided and served as toastmaster. Mr. Leon Weiner

RAY HECKMAN

DENNIS CRAWFORD

DEAN SULLIVAN


BILL HYSSONG

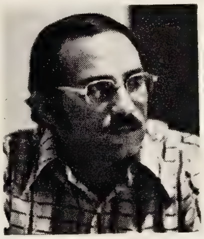
MIKE GERSHEN

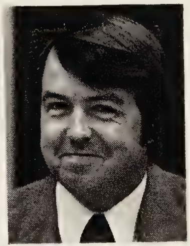
JOHN O'MALLEY

GORDON KNIGHT

BOB GITTINGS

TOM DONOVAN


BOB MUMMEY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and Mr. Milton A. Friedman served as Co-chairmen of Arrangements. Among the special guests were Dr. Albin Kuhn, Chancellor of the University, Dean William Kinnard, Jr., and Col. Logan Schutz, Director of Alumni International. The Invocation was given by Dr. Samuel L. Fox and the Benediction was pronounced by Mr. Victor H. Morgenroth.

* * * * *

Presentation of Special Award To Irving I. Cohen

by

Dr. Ralph F. Shangraw, Professor of Pharmacy
School of Pharmacy
University of Maryland, Baltimore

Far too often in the rush of day-to-day activities people do not take the time to honor those who have contributed to what is now accepted as commonplace but which not so long ago did not even exist. We have been so busy at the School of Pharmacy during the past few years that we may have been guilty of just such an oversight.

Thinking back to an earlier period when a slower pace existed, the names of a number of pharmacists who were always willing to give me a helping hand come to mind, Vic Morgenroth and Paul Freiman, among others present in this room, and the person whom we would like to honor this evening—Irv Cohen.

Irv Cohen has had many honors. He is Past President, University of Maryland School of Pharmacy Alumni Association; Past President, Baltimore Metropolitan Pharmaceutical Association and Honorary Past President of the Maryland Pharmaceutical Association. Irv was on the Board of Directors of the Calvert Drug Company and is presently Director Emeritus.

There are few organizations in pharmacy or local civic clubs in the Arbutus area which Irv did not or does not presently serve. Above all Irv is a pharmacist who cares about the people he serves in his pharmacy.

We are here tonight to honor Irv for his achievements as Chairman of the School of Pharmacy Committee of the Maryland Pharmaceutical Association and for the establishment of the Robert L. Swain Model Pharmacy and the B. Olive Cole Museum.

There are only a few faculty members currently at the School who remember that large, empty room on the left as you entered Dunning Hall. It stood empty for six years. I'm sure many of you remember seeing it. I'm not sure what that room would be today if it were not for Irv and his dream of a prototype pharmacy, established for use in training pharmacy students. His dream was realized, and that pharmacy stands today, both as a working laboratory for undergraduate students and as a symbol of our profession.

Certainly, if there was ever a monument to one person's vision and persistence in the face of innumerable obstacles, it is the Robert L. Swain Model Pharmacy.

On behalf of Dean Kinnard, the entire faculty and student body of the University of Maryland School of Pharmacy, I would like to present this plaque to Irving I. Cohen in honor of his contribution to the School of Pharmacy.

—Photo by Paramount Photo Service

Irvin I. Cohen, second from right, holds plaque presented by Dr. Ralph F. Shangraw, right. Dr. Peter P. Lamy, left, and Henry G. Seidman with plaque to be affixed in Swain Model Pharmacy, also participated in the ceremonies.

Legend drugs
in their own time
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1000 capsules
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Geigy
NDC 28-50-10
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Caution: Federal law prohibits dispensing without prescription.
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Each capsule contains
Butazolidin® phenylbutazone USP 100 mg
dried aluminum hydroxide gel USP 100 mg
magnesium trisilicate USP 150 mg
Geigy
1000 capsules
Caution: Federal law prohibits dispensing without prescription.
Important: Read accompanying prescribing information carefully for indications, dosage, adverse reactions, precautions, contraindications and other warnings before using
Geigy
NDC 28-11-10
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imipramine hydrochloride
25 mg.
1000 tablets
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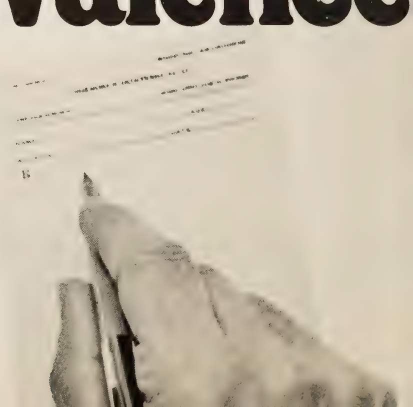
Bioequivalence



the weight of scientific opinion:

Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

DRUG
BIOEQUIVALENCE

A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:
(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

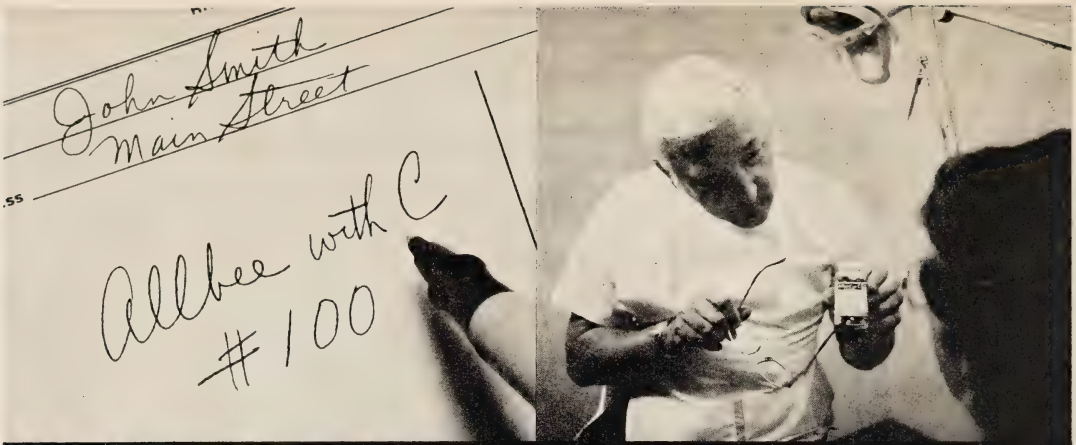
The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

P·M·A

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

protecting the integrity of the Rx's you dispense


John Smith
Main Street
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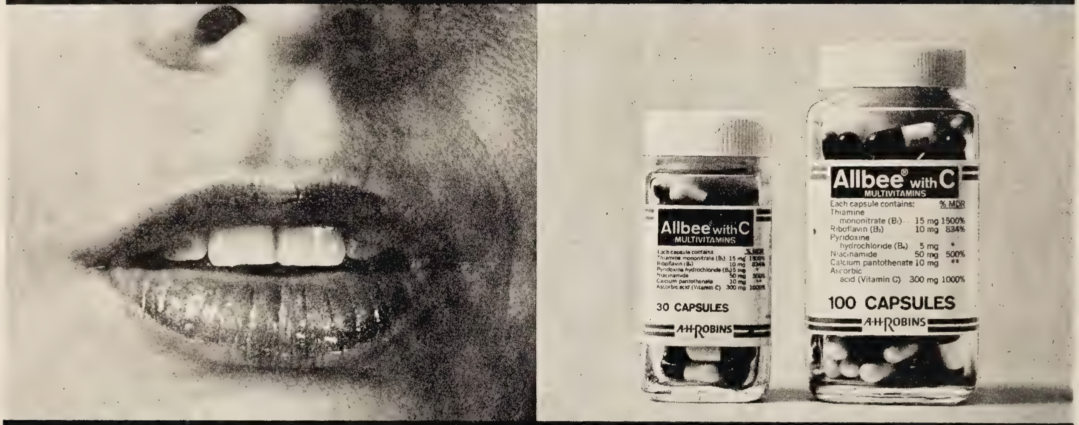
by prescriptions...professional recommendations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TOTAL PARENTERAL NUTRITION

by

June H. Shaw, M.S.* and Peter P. Lamy, Ph.D.†

History of Parenteral Nutrition

Although parenteral therapy owes its origins to Harvey's description of the circulation of blood, it was not until 1656 that the first intravenous injection of a medication into an animal was performed by Christopher Wren, noted more for his achievements in architecture than in medical experimentation. In 1818, the first parenteral therapy in humans was recorded when Blundell attempted blood transfusions (1). In 1831, when Thomas Latta successfully infused saline into cholera victims, parenteral therapy established itself historically as acceptable therapeutic practice although acceptance by medical practitioners was not immediate (2). Infusion of sterile glucose solutions accomplished during World War I, Rose's explanation of the nutritional significance of the amino acids (3), the introduction of protein hydrolysates in 1937 and the unsuccessful utilization of fat emulsions during the 1950's were steps to the understanding of parenteral nutrition (4).

Despite this accumulation of knowledge pertaining to parenteral nutrition, surgeons were not able to reverse the post surgical catabolic state because:

1. protein hydrolysates administered parenterally were excreted with no gain in lean tissue mass
2. there was invariable development of phlebitis in peripheral veins when hypertonic glucose solutions were added to improve the utilization of the hydrolysates
3. there was a high incidence of infection in peripherally placed catheters

In 1968, Dudrick, *et al.* (5) described a technique whereby an intravenous catheter could be placed into the vena cava or the right atrium where sufficient dilution would eliminate the problem of phlebitis. This technique plus a carefully formulated balanced nutrient solution has revolutionized parenteral nutrition. Problems involving the formulation of this nutrient solution has brought hospital pharmacy into active participation in this area.

Definition of Terms

The term "hyperalimentation" first appeared in the literature in 1965 and referred to the infusion of fat emulsions (6). Dudrick (7) defines hyperalimentation as the intravenous administration of nitrogen, calories and other nutrients sufficient to achieve tissue synthesis and anabolism in patients with normal and excessive nutritional needs. Simple parenteral alimentation, in contrast, may provide only basal nutritional requirements. Some feel that the term "hyperalimentation" may be interpreted as meaning that all patients being maintained in adequate nutritional status solely by intravenous means require solutions providing nutrients in amounts much larger than necessary to maintain normal weight. These authors find the term "total parenteral nutrition" more acceptable (8-10).

Indications for Total Parenteral Nutrition

Surgical Starvation

Human evolution has erected an edifice of functioning lean tissue high in potassium and low in sodium in an environment that is high in sodium and low in potassium, the cell in the extracellular fluid. The health of this lean tissue depends on energy and osmotic relationships. This energy is expended on protein synthesis, muscle work and the maintenance of normal concentrations of electrolytes. This energy is supplied by glucose (11).

Before the advent of total parenteral nutrition, the surgeon was not able to reverse the devastating effect that the complicated surgical procedure has on normal tissue.

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*June Shaw is Director of Pharmacy Services, South Baltimore General Hospital, Baltimore, Maryland 21230.

†Dr. Lamy is Professor of Pharmacy and Director of Institutional Pharmacy Programs, University of Maryland Hospital/School of Pharmacy, Baltimore, Maryland 21201.

Abstract from a thesis submitted by Mrs. Shaw to the Graduate School, University of Maryland at Baltimore, in partial fulfillment of the requirements for the degree of Master of Science.

On the basis of this work, Mrs. Shaw was selected to be the recipient of the Hospital Pharmacist of the Year (1975) Award by the Maryland Society of Hospital Pharmacists.

A dramatic picture of the severity of surgical "starvation" is the comparison of the weight loss due to lack of food (75 to 100 g. per day) and the weight loss due to trauma (500 g. per day) (12). This may be explained by different insulin response to hyperglycemia during stress, the diabetes of trauma, as opposed to a greater insulin response to the hyperglycemia of starvation (13).

The catabolism that follows surgery is not understood, but lack of food is not the only factor involved. The excess fat is mobilized first and then the protein. Cuthbertson (14) was the first to demonstrate that nitrogen loss accompanies the post-traumatic weight loss. Some feel that this catabolism is a device by which the body provides itself with basic nutrients (amino acids and potassium) for protein synthesis, readily available wherever they may be needed (15). Negative nitrogen balance can be accompanied by protein synthesis in some area, such as wound healing. By this means the wound may receive some specific nitrogen compound from the muscle, perhaps amino acids of a small molecular weight required for the synthesis of mucopolysaccharides and other collagen precursors (16). Others feel that the basic nutrients provided are carbon intermediates which may be used to manufacture nonessential amino acids which in turn manufacture new glucose, a feat that fat mobilization cannot achieve (17).

Simple parenteral alimentation does not provide the quantity of nutrients needed to reverse the catabolic state. At best the surgeon can only maintain the patient for the "normal expected time" of recovery. The patient must endure a negative nitrogen balance that is directly related to the return of the tensile integrity of the disrupted tissue, a period of four to 10 days.

Patient Selection

Total parenteral nutrition is indicated only when oral or tube feeding is contraindicated or inadequate and when conventional parenteral support is no longer sufficient for the needs of the patient. Table I lists the particular indications for total parenteral nutrition.

TABLE I

General Indications For Total Parenteral Nutrition

Acute and Chronic Renal Failure
Alimentary Tract Anomalies
Alimentary Tract Fistulas
Burns
Chronic Diarrhea
Chronic Vomiting
Complicated Trauma
Diverticulitis
Gastrointestinal Obstructions
Granulomatous Enterocolitis
Hypermetabolic States
Indolent Wounds and Decubitus Ulcers
Malabsorption
Malignant Disease (Adjunctive Therapy)
Malnutrition
Non-terminal Cancer
Pancreatitis
Protein-losing Gastroenteropathy
Severe Anorexia Nervosa
Short-bowel Syndrome
Ulcerative Colitis
Ulcer Disease

The decision to initiate total parenteral nutrition is a long term commitment to a potentially hazardous, expensive procedure. If the maintenance or improvement in nutritional status will assist in the recovery or permit significant improvement of the disease state the program should be pursued vigorously, but it is not indicated in prolonging the life of the terminal patient. Shils (19) suggests that total parenteral nutrition be initiated if:

1. the patient's edema-free body weight has fallen to below 10 percent of his ideal body weight
2. conventional intravenous feeding has been utilized for four weeks with no immediate prospect for improvement

This period would be shortened if the patient's clinical status so indicates, such as in poor wound healing, development of a hypermetabolic state or exhaustion of periperal sites for venopuncture.

Components of Total Parenteral Nutrition

The basic solution, as described by Dudrick (20), is a balanced nutrient carefully formulated to provide the protein and carbohydrate necessary to reverse the catabolic state within the 2500 ml. obligatory daily fluid intake. The normal state requires protein at the intake rate of 1 g./kg./24 hours (approximately 70 g.) plus 30 calories per gram of protein for optimum utilization. The severely ill or post traumatic patient may require five times this quantity (21).

Protein serves primarily to provide tissue growth and repair, but if calorie intake is inadequate, it is burned for energy. Carbohydrates and fats spare protein and make it available for anabolic purposes. The caloric intake necessary for nitrogen balance for those receiving amino acids is higher than for subjects receiving whole protein (whole protein: 35 calories per kg., amino-acids: 53-60 calories per kg.) (22).

When protein hydrolysates are infused alone they are utilized for energy. Calories spare these proteins at an optimum ratio of nitrogen to calories of 1/150 to 1/200 (23). Unless the calories and proteins are infused simultaneously, there is a large increase in nitrogen urinary loss (24). The protein-carbohydrate ratio is extremely important to the success of total parenteral nutrition. The protein cannot be raised without a comparable increase in glucose.

Sodium

Sodium is the most important cation of the extracellular fluid. The normal plasma serum level is 142 mEq. per liter. The normal ratio of sodium to water is 3.3 ml of water to each millequivalent of the electrolyte. The suggested daily requirement for sodium is 60 mEq. and up for adult patients without significant cardiovascular-renal losses. The upper range of sodium daily requirement is variable. Sodium balance may fluctuate without profound significance.

Potassium

Potassium is the principal cation of the intracellular fluid, 150 mEq. per liter. The normal plasma serum level is 3.5 to 5.5 mEq. per liter. The plasma level does not always reflect the tissue level.

The obligatory daily excretion of potassium in the urine of the usual surgical patient receiving isotonic intravenous fluids approximates 40 to 60 mEq. and this loss may be increased with additional stress. This obligatory loss must be replaced and, in addition, sufficient potassium must be given to achieve protein synthesis. In muscle, the proportion of potassium to nitrogen is 3 mEq. per gram. It has been suggested that a loss of 5 kg. of muscle protein requires 600 mEq. of potassium with the protein nitrogen necessary for its replacement (25).

Also, the potassium ion is known to be an essential activator of many intracellular enzymatic reactions and especially those involved in high energy phosphate conversion in carbohydrate metabolism. Potassium depletion may cause an intracellular block on the ATP-ADP system for the phosphorylation of glucose (26). There is controversy as to whether the potassium ion increases insulin secretion or increases glucose utilization. Conn (27) has shown that in induced potassium depletion the rate of glucose disappearance from the blood after intravenous injection was reduced 45 percent even when serum potassium levels had not changed. Further studies have shown that the potassium supplementation in patients known to have glucose intolerance improved glucose tolerance without increased insulin input (28). This seems to support the theory of increased glucose utilization.

Magnesium

The daily requirement for magnesium is estimated at not more than 250 mg. The normal serum concentration is 1.7 to 2.3 mEq. per liter.

Magnesium functions in carbohydrate metabolism as an activator for many of the enzymes of the glycolic systems (29). An increased protein intake increases the requirement for magnesium (29). Acute magnesium deficiency for a period of three to four weeks may cause hypomagnesemia, hypomagnesuria, hypocalcemia, hypocalciuria and hypokalemia. The fall in serum calcium secondary to magnesium deficiency is associated with neurological signs (30). Magnesium administration retards calcium stone formation (31). Erythrocyte levels yield a better parameter of magnesium deficiency than do serum levels, however, serum levels are reliable evidence of magnesium excess (32). Magnesium deficiency may interfere with potassium replacement (28).

Calcium

Normal plasma calcium concentration is approximately 5 mEq per liter representing both the ionized and unionized forms. The ionized calcium is the important physiologic fraction. It is inversely proportional to the calcium bound to the plasma proteins and is the calcium which is important from the standpoint of neuromuscular function. A change in the pH of the plasma alters the degree of the ionization of the calcium (32).

Phosphorus

Normal phosphate plasma levels range between 0.9 and 1.5 per liter. Phosphate exists in both monovalent and divalent forms, therefore, the millequivalent concentration of the phosphate ion changes with each alteration of plasma and serum pH.

Increased carbohydrate infusion is accompanied by a temporary decrease in serum phosphate (32). Severe hypokalemia may lead to severe hypophosphatemia perhaps secondary to tubular damage with failure to reabsorb phosphate (33).

Vitamins and Trace Elements

Because of the inordinate quantity of carbohydrate infused during total parenteral nutrition, and because of the effect of carbohydrate administration on the utilization of thiamine, the administration of thiamine may be of critical importance during parenteral nutrition (34). Biochemical evidence of pyridoxine deficiency may be detected as early as seven days after the beginning of a pyridoxine deficient diet fed to healthy adults (35). Riboflavin deficiency has been detected in similar studies within seven days also (36).

Clinical evidence of ascorbic acid deficiency may manifest itself within 29 days of depletion (37). Folic acid deficiency may be demonstrated within four to six weeks of depletion (38). These established deficiency studies emphasize the necessity of early and adequate water soluble vitamin supplementation during total parenteral nutrition.

Dudrick, *et al.* (39) list as an abuse of intravenous hyperalimentation the inadequate or incomplete supplementation of vitamins, particularly the exclusive use of water soluble vitamin C and B complex. The patient who has been suffering from starvation for prolonged periods of time needs fat soluble vitamins as well. Administration of the fat soluble vitamins must be judicious to avoid vitamin A and D toxicity, especially in children. At least one case of vitamin A and D toxicity in an adult receiving total parenteral nutrition has been reported (40).

Trace elements are required after one month of total parenteral nutrition and can be supplied by the administration of one unit of fresh plasma weekly (41). Iron requirements can be met by weekly intramuscular injections of iron dextran or by blood transfusion (42).

Recommendations

Suggested Procedures for Maintaining
Total Parenteral Nutrition Program

1. Parameters within which acceptable formulas should remain:
    a. The ratio of nitrogen to calories must remain from 1/150 to 1/200.
    b. Sodium must be added as the chloride, acetate or bicarbonate to a total of 59 mEq. of sodium per liter. When using bicarbonate as a buffer, it can be added as ⅓ of the daily sodium requirement. Total chloride/sodium ratio should approximate 1:1.
    c. Phosphate must be added as the potassium salt from 6 to 20 mEq. per day. Phosphate need not be added to casein hydrolysate.
    d. Potassium must be added as the chloride or acetate to a total of 40 mEq. per liter. Adjust total to compensate for potassium present as phosphate.
    e. Magnesium must be added as the sulfate to a total of 8 mEq. per day.
    f. Calcium must be added as the gluceptate or chloride as needed, the total calcium/phosphate ratio must be kept at 1:2.
    g. Add one ampule per day of a multiple vitamin formulation which must include the fat soluble vitamins.
2. Radiological verification of catheter placement must be obtained before the initial bottle is hung.
3. Begin total parenteral nutrition at 1000 ml. per 12 hours from 24 to 48 hours. If tolerated without 3^+ glucosuria increase to 100 ml. per hour for 24 hours, again, if tolerated, increase to 3000 ml. per 24 hours.
4. Fractional urine must be done on every voided specimen. Nursing personnel must notify physician immediately of a 3^+ glucosuria.
5. Cyanocobolamine 1000 mcg. IM per month must be given.
6. CBC with retic count, BUN, creatin and patient weight must be ascertained twice a week.
7. SMA 1260, PT and PTT, serum and urine calcium, magnesium and phosphate must be done once a week.
8. Urine and serum glucose and electrolytes must be done daily until stable then twice a week.
9. If total parenteral nutrition program exceeds a one month period, iron and folic acid levels should be ascertained.
10. The infusion rate must be constant, 24 hours per day. If rate falls behind, reset to correct rate. *(DO NOT CATCH UP.)*
11. Catheter cleaning and dressing change must be done three times a week, preferably by the physician who inserts the catheter.
12. I.V. tubing must be changed daily.
13. Nursing personnel must notify physician of temperature elevation immediately.

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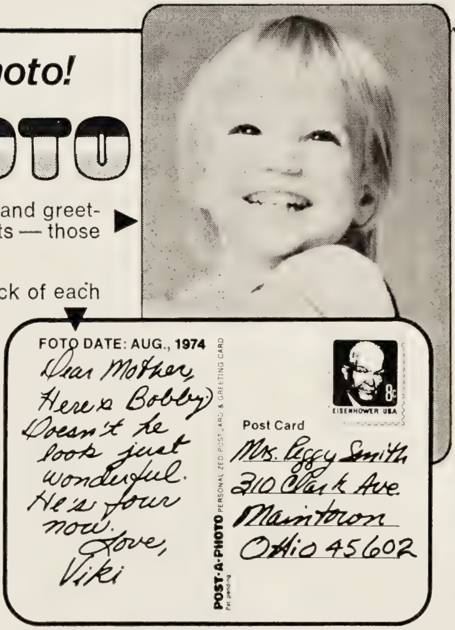

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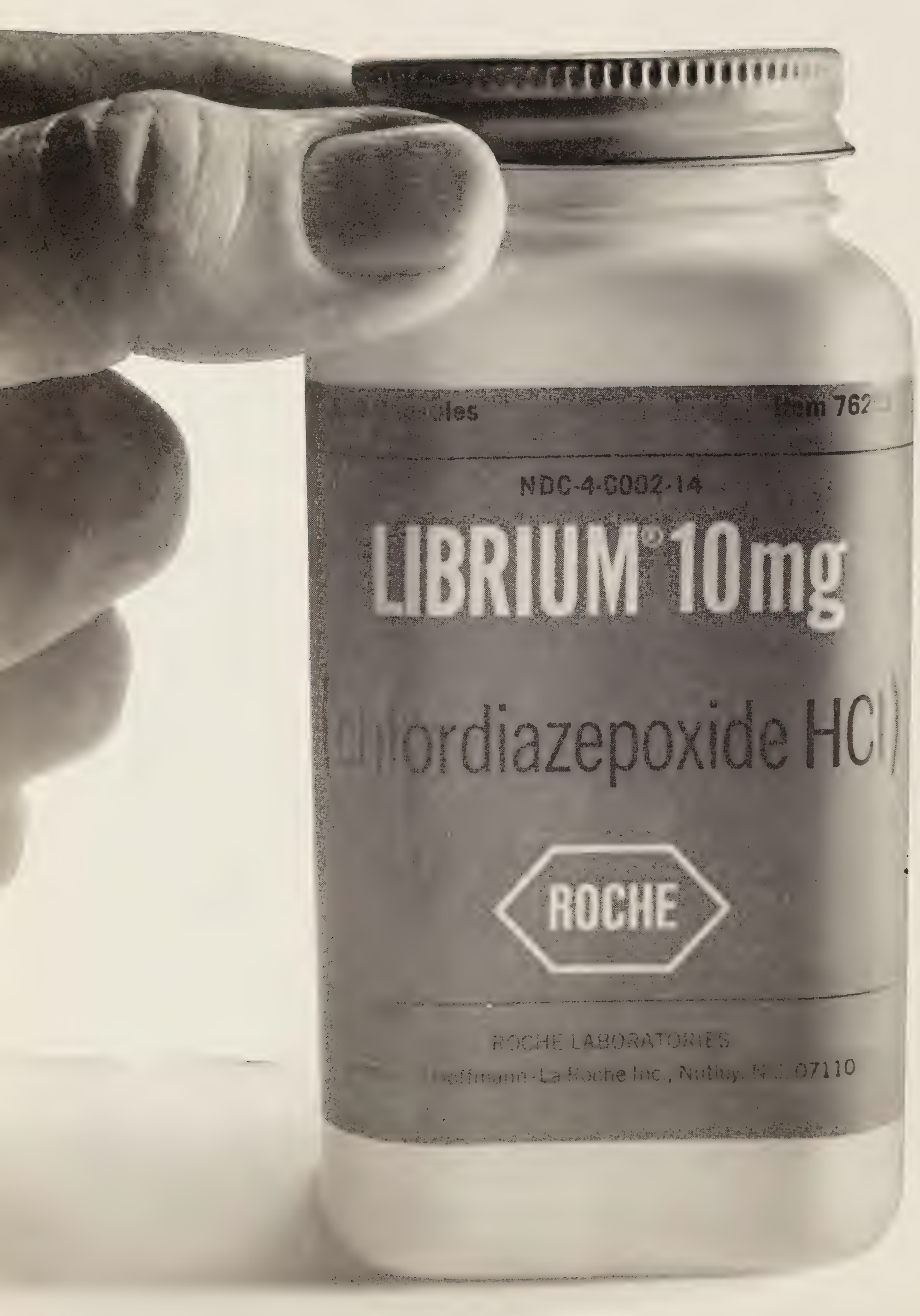
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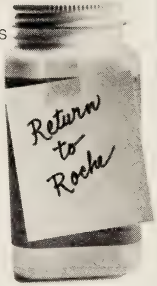

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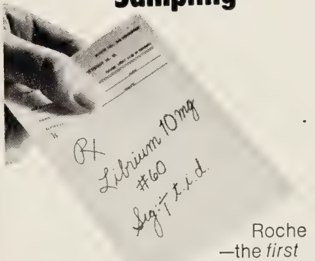

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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Pharmacy Changes

The following are the pharmacy changes for the month of April:

New Pharmacies

Read's Inc., Arthur K. Solomon, President; 770 Lenox Street, Baltimore, Maryland 21217.

Rodman's Discount Drugs, Ronald Cohen, President; 615 South Frederick Avenue, Gaithersburg, Maryland 20760.

Bethesda Park Pharmacy, David C. Healy, President; 11125 Rockville Pike—Suite 102, Rockville, Maryland 20852.

Lisbon Pharmacy, Charles V. Keller; 16105 Frederick Road, Lisbon, Maryland 21765.

Changes of Ownership, Address, Etc.

Elkton Pharmacy, Inc., Milton Waxman, President; (Change in address from 126 West Main Street), 124 West Main Street, Elkton, Maryland 21921.

Blatt AID Drugs, Shirley Blatt; (Change of ownership from Thomas Blatt), 7000 Eastern Boulevard, Baltimore, Maryland 21224.

Arcade Pharmacy, Karl G. Wagner; (Change of pharmacy name from Edgehill Pharmacy and change of ownership from Stanley L. Thompson, President), 500 Race Street, Cambridge, Maryland 21613.

No Longer Operating As Pharmacies

None.

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From letters and notes . . .

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Sincerely,

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Mrs. DuMez is the widow of Dr. Andrew G. DuMez who was Dean of the University of Maryland School of Pharmacy from 1926-1948. Mrs. DuMez now resides in Rochester, Minnesota.

* * *

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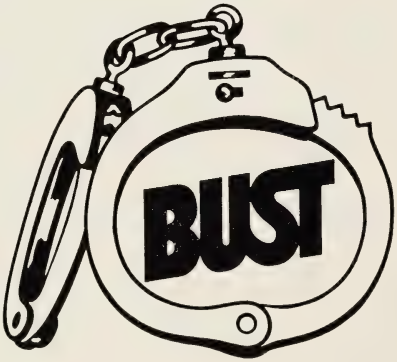

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EDITORIAL

(Continued from Page 6)

patient in the best interest of effective drug therapy.

In the area of "Continuing Education for Relicensure," differences of opinion resulted in our acting to kill any legislation for 1975. We have already begun to work on developing a sound law for 1976.

Other MPhA actions produced defeat of perennial proposals to repeal all restrictions on the advertising of prescription drugs and to repeal the Maryland Fair Trade Law. As of now it is still unlawful to advertise prescription drugs by generic or brand name.

We believe our proposals which were enacted and the positions we espoused were in consonance with the public health and welfare interest. MPhA has sought to advance the capability of the profession of pharmacy to serve the health care needs of the public. We can be proud of our record in Annapolis.

— Nathan I. Gruz

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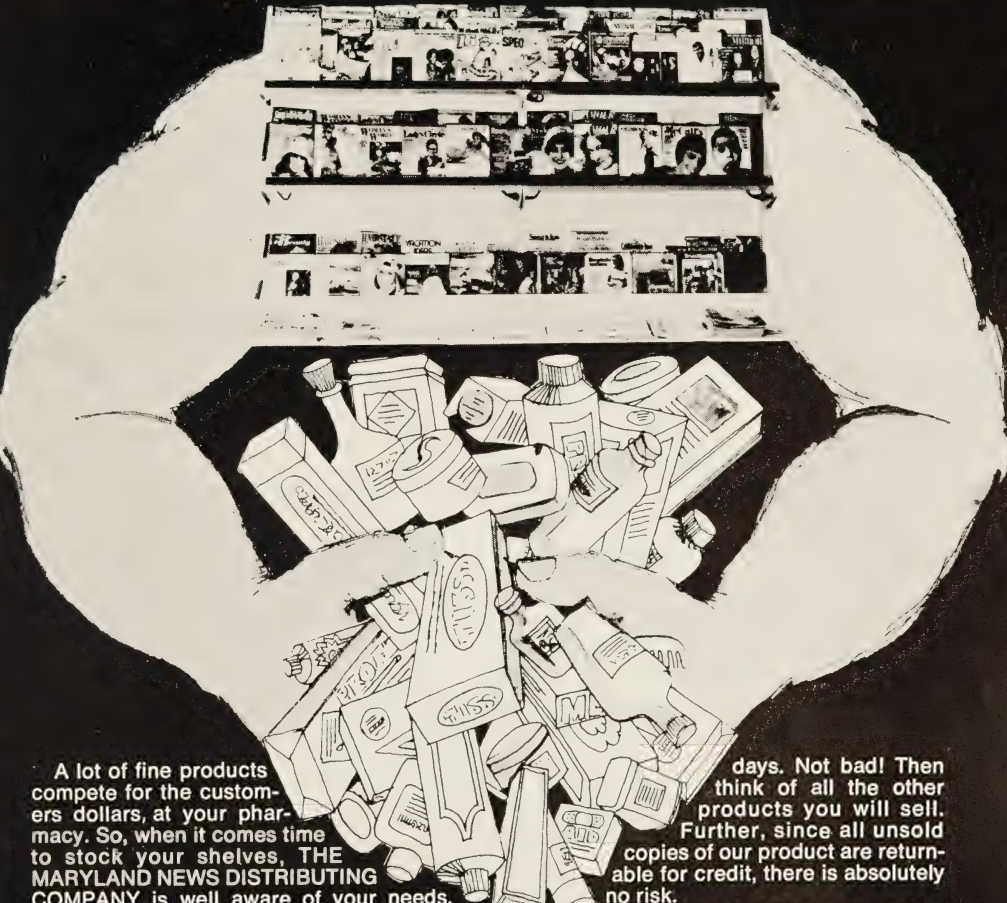

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obituaries

George W. Berger

George W. Berger, 72, a graduate of University of Maryland School of Pharmacy in 1922 died April 25. He was a retired confectioner.

Marvin M. Kessler

Marvin M. Kessler, a native of Baltimore, died in Miami Beach, Florida, April 9. He had owned a pharmacy in Miami Beach. Previously he had worked in a pharmacy in Reisterstown.

A graduate of Baltimore City College, he received his pharmacy degree from University of North Carolina. He was a former national vice president of Phi Alpha and served in the Navy in World War II.

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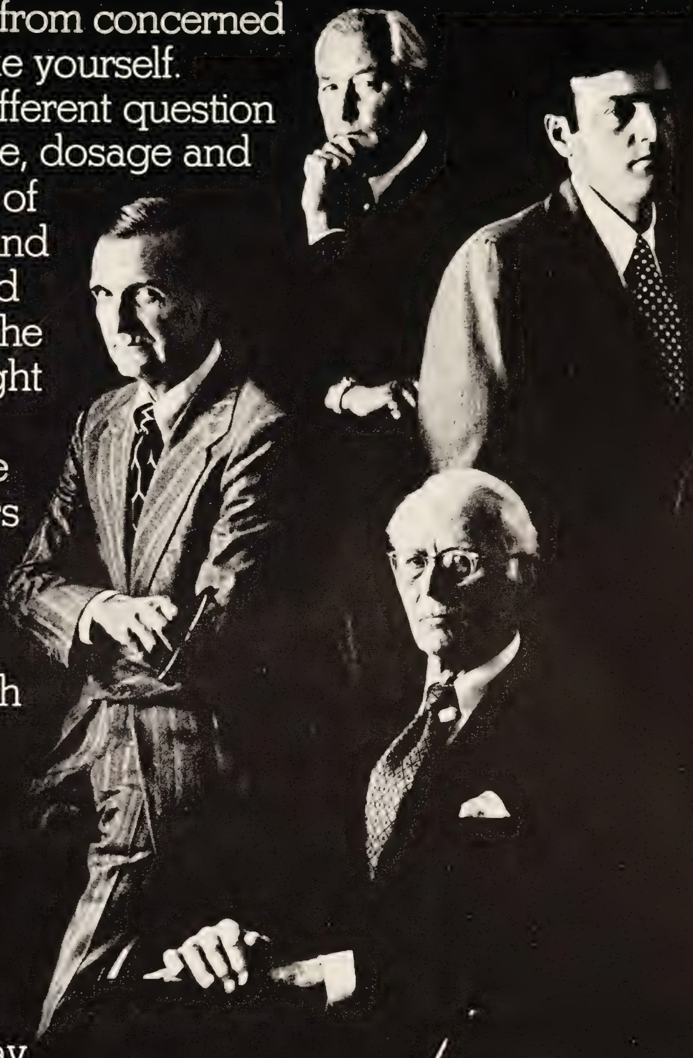

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THE MARYLAND PHARMACIST

Official Journal of
The Maryland
Pharmaceutical
Association

MAY 1975
VOL 51
NO 5

Third Party Prescription Programs: Short Term Gain—Long Term Disaster

Regional Meeting and House of Delegates Minutes

Robert E. Snyder Appointed to Board of Pharmacy

October 29—Regional Meeting/House of Delegates—College Park

January 16-23—MPhA Seminar and Tour—Mexico City/Acapulco

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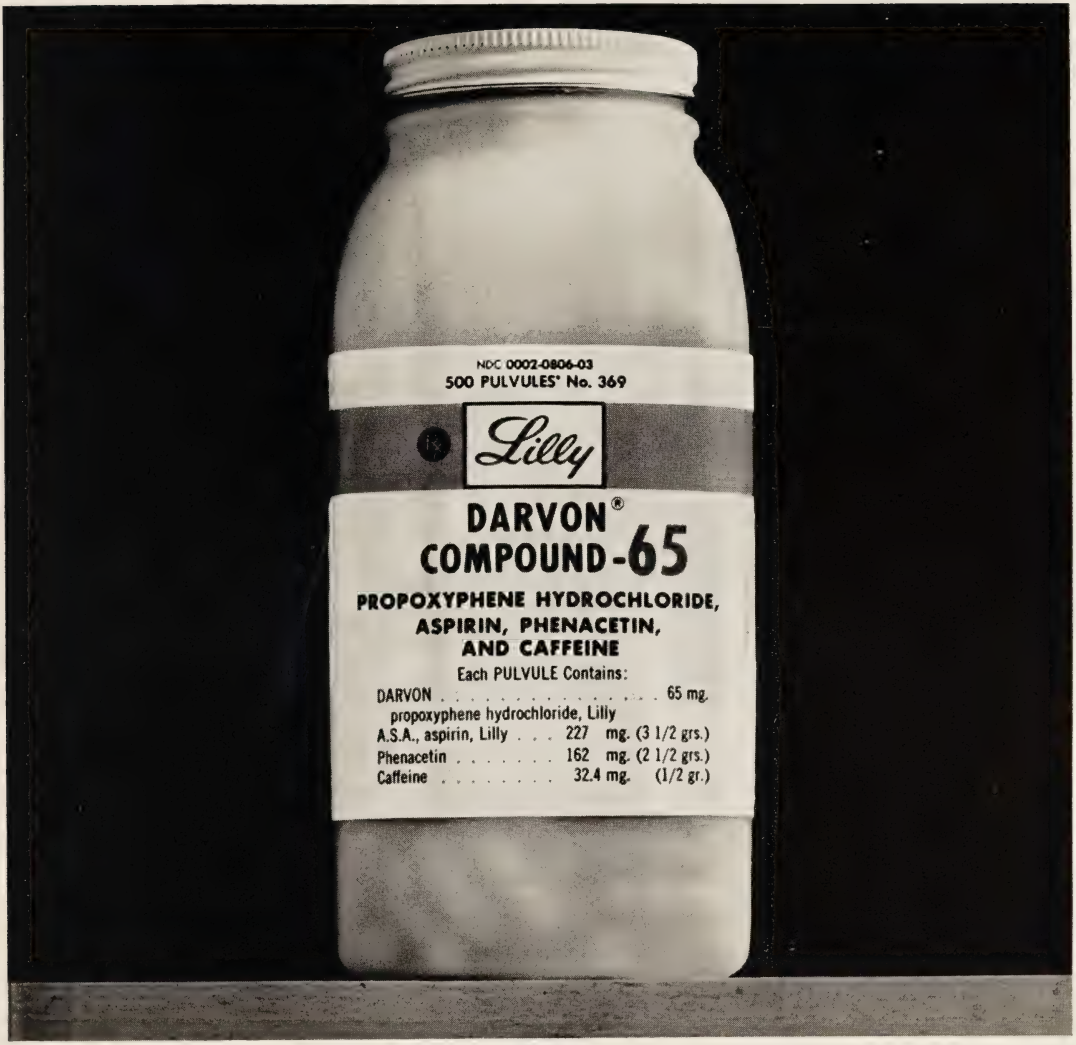
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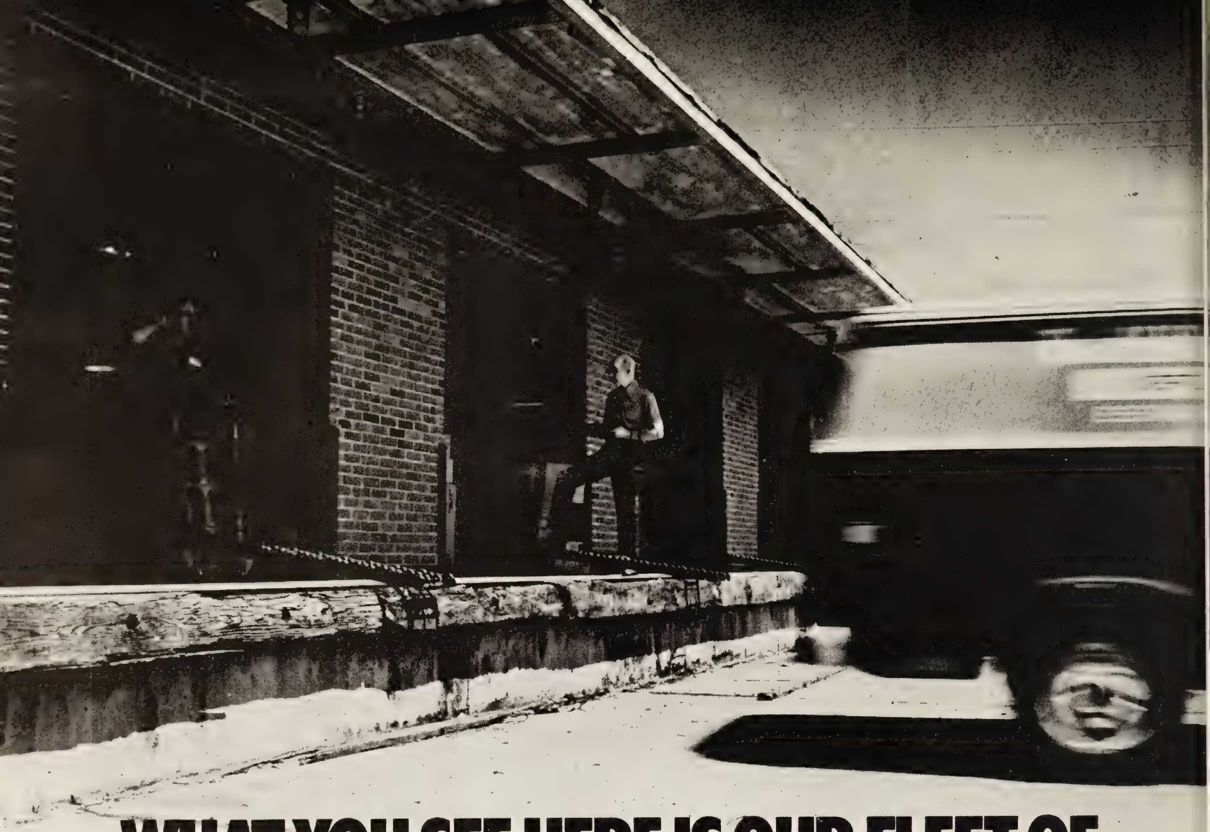

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MAY 1975 VOL. 51 NO. 5

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editorial

Third Party Prescription Programs: Short Term Gain and Long Term Disaster

As new third-party prescription programs are announced by unions, insurance carriers or "processing" firms, pharmacy owners and management of pharmacy chains are faced with tough decisions.

Should any and every third-party plan be quickly accepted by pharmacies or should there not be an evaluation made before agreeing to participate?

How should a proposed plan or the revision of an existing plan be assessed? Certainly yardsticks exist in the form of on-going programs of high professional standards as to pharmaceutical service required, administrative procedures, claim forms, attitudes of executive and clerical personnel and equitable remuneration for services required.

It is difficult for the profession's representatives to be strong advocates of the legitimate professional and economic interests of pharmacy when some in the management sector rush in an attempt to secure exclusive arrangements with groups regardless of whether the terms are equivalent or worse than those that are generally prevailing in other plans.

Both independents and chains should carefully assess each new plan or any changes in plans to assure themselves that they are participating in programs that permit them to give comprehensive quality pharmaceutical services to their patients. At the same time, they must judge whether they are equitable to them professionally and administratively and permit them to remain economically viable.

We will advise as to the professional and administrative aspects of various plans. Economic evaluations and decisions will have to be made unilaterally by each pharmacy.

Let us individually and collectively look at third party programs realistically and exercise mature judgment. Let us not rush off for short term gain and long term disaster.

Wedgwood at Seventy-Five

"A band of convivial spirits came together at the semi-annual meeting of the Maryland Pharmaceutical Association" and decided to form a club to hold a monthly meeting and dinner.

Thus, on January 17th, 1900 an invitation went forth from a "Provisional Committee" consisting of Alfred R. L. Dohme, Henry P. Hynson and J. Webb Foster to a small "coterie" of "essential spirits." They were active in the affairs of the profession of pharmacy, serving as presidents of MPhA in 1899, 1895 and 1902 respectively.

They had named the organization the Wedgwood Club after the renowned English potter Josiah Wedgwood, who introduced pharmaceutical ware of high quality in the form of mortars, pestles, pill tiles and ointment pots.

The Wedgwood Club is completing seventy-five years of fellowship, friendship and conviviality—a most remarkable record. Its membership has always been filled predominately by pharmacists who were dedicated to their profession, many serving as leaders of the Maryland Pharmaceutical Association, University of Maryland School of Pharmacy, Alumni Association, Board of Pharmacy and other groups.

Included in the founders of Wedgwood was one of the original incorporators of the Maryland Pharmaceutical Association. Among the thirty-one individuals who were founders or attended the second meeting on February 23, 1900, fifteen served as officers of MPhA, ten as president. In the membership roster of 1966-75, there are six MPhA past presidents (three deceased) and two honorary presidents.

This glimpse into the history of Wedgwood shows the close connections with the Maryland Pharmaceutical Association from the time of the club's founding until this day.

As we approach the seventy-fifth anniversary celebration on September 25 of this year, we wish Wedgwood another seventy-five years of success as it pursues its unique social contributions to pharmacy in Maryland. Congratulations to the men of Wedgwood past and present!

— Nathan I. Gruz

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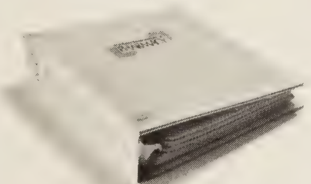

To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy*, will keep you continuously informed on a wide range of pertinent subjects—new government regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, New Jersey 07110.

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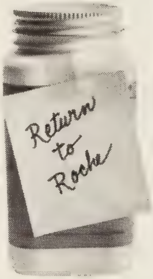

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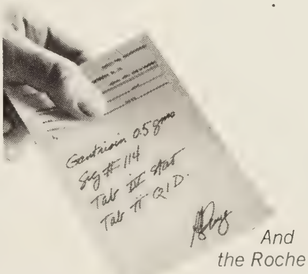

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Contraindications: Hypersensitivity to sulfonamides; infants less than 2 months of age; pregnancy at term and during the nursing period.

Warnings: Safety in pregnancy not established. Do not use for group A beta-hemolytic streptococcal infections, as sequelae (rheumatic fever, glomerulonephritis) are not prevented. Deaths reported from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias. Sore throat, fever, pallor, purpura or jaundice may be early indications of serious blood disorders. CBC and urinalysis with careful microscopic examination should be performed frequently.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy or bronchial asthma. Hemolysis, frequently dose-related, may occur in glucose-6-phosphate dehydrogenase-deficient patients. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *Allergic reactions:* Erythema multiforme (Stevens-Johnson syndrome), generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *Gastrointestinal reactions:* Nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; *Miscellaneous reactions:* Drug fever, chills and toxic nephrosis with oliguria and anuria. Periarteritis nodosa and L.E. phenomenon have occurred. Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

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May 8, 1975
Meeting Highlights

- Received a letter from Mr. Newburg, Executive Assistant to the Governor, regarding the designation of five health service areas for the state under Public Law #93-641.

- President's Report—President Freiman attended the APhA convention in San Francisco where he met with representatives of Pfizer regarding their policies on distribution and the new Pfipharmics division. Dr. Shangraw was asked to become chairman of the MPhA Continuing Education Committee. An MPhA Advisory Committee to meet with state Medicaid officials regarding MAC and other Medicaid problems has been formed with the state. Dean Kinnard has recommended a Tripartite Committee on labeling as part of standards of practice be formed. Dr. Shangraw's statement regarding the need for action on labeling of OTC drugs was received. Attention is being given third party problems such as Teamsters Local #355 and Iron Workers Local #16 both of whom have arrangements with Reads. The MPhA responsibility on the new Rx price posting law has been assigned to the MPhA Consumer Affairs Committee.

- Treasurer's Report—The report was reviewed and accepted as in line with the 1975 budget.

- Executive Director's Report—A report was made on the Regional and APhA annual committee meetings. The meeting of the state executives at APhA reviewed legislative action in a number of states. Information was presented on veto hearings scheduled by the Governor on House Bills 633 and 1486 concerned with labeling and the formulary and drug product selection bills. Major activities also involved third party programs, Medicaid and MAC. Director Gruz reviewed report of HEW Health Manpower data on the registered pharmacists in Maryland in 1973. This showed 1,922 active resident pharmacists in Maryland—663 in independent community pharmacy, 725 chain community pharmacy, 173 hospital and nursing home, 296 in government, teaching and other, 46 in manufacturing and 19 in miscellaneous. He stated he had been contacted by the Montgomery County Medical Care Foundation regarding pharmacists' participation in PSRO activities for allied health professionals. Regarding national legislation for prescription drug benefits, Senator Ribicoff's bill S.1456 would broaden Medicare to include prescription home drugs, but the AMA national health insurance bill would provide for drugs used in hospitals and skilled nursing homes, but no prescribed drug coverage for home patients. The NARD is undertaking a survey to indicate the increase in crimes against pharmacies. Metropolitan Guild of Pharmacists has been expanding in the middle Atlantic area and is engaged in negotiations for affiliation with a national union.

- Convention. The format for the forthcoming convention at the Hilton Inn was reviewed and the concensus was for one evening program only, namely the banquet.

- Legislation. There was discussion of the forthcoming veto hearings on Monday, May 12.

- Prescription Insurance Programs. Mr. Rubin reported on the meeting with the Maryland Society of Consultant Pharmacists regarding payment for consultation. The ASCP is seeking a fee per month per patient. They claim their members serve 10,000 out of the 20,000 nursing home beds in Maryland. There was a suggestion that MPhA study the matter of payment of consultant fees for all pharmacists for services such as patient profiles. There was discussion of proposals for state MAC and the FTC position on actual acquisition cost.

- Maryland Board of Pharmacy. Maryland Board of Pharmacy has drawn up proposed guidelines for securing a pharmacy in the larger establishment during hours when the pharmacy service area is closed. There is a question regarding the policy of permitting a key to the pharmacy service area in the hands of non-pharmacists. Dean Kinnard moved that a letter be sent to the Board of Pharmacy requesting clarification of the status of the Secretary of the Board.

- School of Pharmacy. Dean Kinnard reported on a proposal whereby community colleges would give a 40 hour course for the administering of drugs by ancillary personnel in nursing homes. The Dean reported that the School of Pharmacy would be part of the Bicentennial celebration on the Baltimore Campus. He recommended an MPhA committee be instituted for the Bicentennial exhibits in the museum. He stated that the first class for the Pharm.D. degree had been admitted.

- Legal Counsel Joseph Kaufman commended the Association officers and staff on their efforts at the 1975 legislative session. As for the matter of unions arranging exclusively with one particular pharmacy or chain on third party prescriptions, he emphasized that any suit would have to be outside of the Association.

- House of Delegates. It was agreed that all committees and officers should submit written reports which would be distributed and that the agenda is to be publicized in advance. Speaker Friedman announced that he would be holding a planning meeting on May 22 for the House of Delegates meeting at the convention.

- Peer Review Committee. Mr. Kamenetz reported that the joint MPhA/MSHP Committee had agreed on the revised guidelines.

- Board of Nursing Home Administrators. MPhA had been requested to submit nominees. President Freiman recommended Joseph Dorsch, Morris Bookoff and Murray Polonsky.

- Tripartite's subcommittee on labeling and patient information. Proposals for labeling and patient information to be developed by the subcommittee under Chairman Donald Fedder were approved.

- The meeting adjourned at 2:30 P.M.

New Members

The following is a list of the new members approved at the May 8, 1975 meeting of the Board of Trustees of the Maryland Pharmaceutical Association.

Arnold Davidov, Baltimore, Tuxedo Pharmacy
Thomas E. Patrick, Linthicum, University of Maryland Hospital
Thomas E. Humbert, Westminster, Drug Fair
Warren Zerwitz, Baltimore, K-Mart

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calendar MP

October 12-16—NARD Convention—Fountainbleau—Miami.

October 29 (Wednesday) MPhA Regional and House of Delegates Meeting, Center Adult Learning, University of Md., College Park.

November 16 (Sunday) Alumni Association Oyster Roast, Overlea Hall.

January 16-23—MPhA Seminar and Tour Mexico City-Acapulco.

February 8 (Sunday) BMPA Installation Banquet.

June 20-23—MPhA Annual Convention, Sheraton Fountainebleau, Ocean City, Md.

The Pharmacist's Role In Cancer

The Maryland Pharmaceutical Association was a co-sponsor along with the University of Maryland School of Pharmacy of the Maryland Pharmacists 1975 Symposium, "The Pharmacist's Role in Cancer" sponsored by the Baltimore County Unit of the American Cancer Society on May 22 at the Quality Inn, Towson.

Presiding was Albert Lichtman, Chairman, Pharmacy Sub-committee, Professional Education Committee, Baltimore County Unit of the American Cancer Society.

The program included the following subjects and speakers: "Cancer Is Not Terminal," Don Harrison, 1975 Crusade Chairman, Baltimore County Unit of the American Cancer Society. "Cancer Chemotherapeutic Agents," Nicholas Bachur, M.D., Ph.D., Head, Biochemistry—Baltimore Cancer Research Center. Film: "Michael and Me," the inspiring story of Mike Finamore, cured of leukemia. "Nuclear Medicine and Radiopharmaceuticals," George Burke, M.D., F.A.C.S., Radiologist, South Baltimore General Hospital, Vice President, Baltimore County Unit of the American Cancer Society. "New Concepts in the Diagnosis and Treatment of Breast Cancer," Edward F. Lewison, M.D., Associate Professor of Surgery, Johns Hopkins Hospital, Director at Large on the National Professional Education Committee, American Cancer Society. "Panel Discussion," Mr. Henry G. Seidman—Moderator, President-elect, Maryland Pharmaceutical Association.

Regional Meeting: Minutes of the House of Delegates

April 17, 1975

Quality Inn, Frederick

The meeting was called to order at 10:45 A.M. by the Vice Speaker Irvin Kamenetz. The Secretary of the House, Nathan Gruz, reported that a quorum was present.

President Freiman addressed the house and briefly reviewed the activities of the Association since the preceding meeting. Treasurer Lindenbaum reported on the income and disbursements for the first quarter of the year indicating that receipts were exceeding the same period 1974.

Executive Director Nathan Gruz was then called upon to present his report. He briefly reviewed the legislative session for 1975. Other major activity involved third party programs, particularly Medicaid. In addition to the increase in fee from $1.75 to $1.95 as of January 1st, an additional increase of 5¢ to $2.00 was approved for effective date of July 1, 1975. He also pointed out the improved Association communications to members through the monthly Newsletter. He announced the election of Dean Kinnard of the University of Maryland School of Pharmacy as President elect of the American Association of Colleges of Pharmacy and Chairman of the USP Board of Trustees.

Melvin N. Rubin, Chairman of the Legislative Committee was then called upon to give his report.

Status of Bills Most Directly Affecting Pharmacy At End of Session

1. *Enacted & Awaiting Governor's Signature*

HB 258	Require name of actual manufacturer to be put on label of drugs by manufacturer or distributor, if not manufactured himself.
HB 260	Only a pharmacist may give information on drugs (OTC included) in a pharmacy.
HB 431	To allow Prince Georges County to eliminate all Sunday blue laws if voters approve in referendum in 1976 elections.
HB 581	Allowing prescription to be filled within 120 days after written by physician (MPhA had requested total repeal of this bill which originally allowed only 30 days.
HB 1006	Makes it illegal for a pharmacy to offer a rebate or a hospital or nursing home to accept a rebate in any form.
HB 1026	To require state board to send each pharmacy a sign containing names of 100 drugs and requiring pharmacy to fill in prices and services offered and to post.
HB 1472 HB 1486	Companion bills which will allow pharmacist to utilize formulary in exercising product selection without notifying physician ON MEDICAL ASSISTANCE PRESCRIPTIONS ONLY.
SB 70	To regulate HMO groups.

2. *Enacted — MPhA Requesting Veto*

HB 633	To require expiration date and storage conditions to be put on label when dispensing prescription. MPhA requesting veto of this bill by Governor.

3. *Bills Referred to Legislative Council For Study and Recommendation to 1976 General Assembly*

SB 92	To permit advertising of prescription drugs.
SB 832	To require providers to charge medicaid program no more than they charge other third party programs and no more than usual and customary charges to private pay patients.

4. *Bills Failed*

Continuing education, visible pricing on each item of merchandise, ban on increasing price of consumer goods once marked, telephone price and service disclosure, permit product selection on all prescriptions covered by formulary without informing physician, require at least 100 of an item to be in stock when advertising as a sale, allow sale of prophylatics in all vending machines, syringes on Rx only, Valium in schedule 4, require posting by pharmacy without restrictions as to type and place of sign or information provided, eliminate all Fair Trade laws in state.

SB 490	To require Rx for Codeine containing products statewide.

5. *Budget*

Increase in Medicaid professional fee of 5¢ per prescription was approved effective July 1, 1975.

There was considerable discussion of legislation, particularly of House Bill 1026 which will require posting of prescription prices and services as of January 1, 1976. There was discussion of Senate Bill 832 directed to Medicaid providers whose charges to the state exceed those charged to the general public. The consensus of the House of Delegates was for approval of rules or legislation directed to any reduction or waiver of copay by providers in third party programs. The continuing education legislation was then discussed. President Freiman announced that he would appoint a special committee on continuing education. Mr. Lichter commented on the MPhA/APhA workshop on monitoring the drug therapy of the long term care patient. He stated an excellent program and that the MPhA needed planning for the direction its continuing education should take.

Charles E. Spigelmire, Treasurer of PHARMPAC, the Pharmacists' Political Action Committee, reported on its activities and urged all pharmacists to support the committee through generous contributions. Irvin Kamenetz, Chairman of MPhA Peer Review Committee outlined its activities and its work with the MSHP Peer Review Committee. For the Pharmacy Affairs Committee, Donald O. Fedder, Chairman, reviewed the importance of drug product selection, disclosure of actual manufacturer's name on manufacturer's packages and the need for useful patient information. Mr. Fedder then reviewed the reports of the APhA Policy Committees on Organizational Affairs, Public Affairs and Professional Affairs which was scheduled for consideration at the forthcoming APhA meeting. PSRO and the need for establishment of standards of practice for pharmacy was then discussed.

The luncheon speaker was State Senator Edward P. Thomas of Frederick who reviewed legislation of interest to pharmacists and commended the Association on its effective representation in Annapolis.

Following lunch, President-elect Henry G. Seidman commented on the continuing education programs which had been presented during the year and stated that they were in response to what the pharmacists had requested.

As to Prescription Insurance Programs (third party), Melvin Rubin reported on current status and future planned activities. He announced a new chart of third party programs in Maryland would be published by the Association. He stated that new regulations are being discussed by the state for unit dose compensation by capitation method. The objective of MPhA will be to assure all pharmacists equitable compensation whether in institutional, community or nursing home practice.

There appeared to be very encouraging signs of close cooperation between MPhA and the Medicaid officials.

Morris R. Yaffe, President of the Board of Pharmacy, reported briefly on Board activities. Guidelines are being developed for situations where a pharmacy in a larger establishment may be closed while the establishment is open. He said the litigation in which the Secretary of the Board is involved was expected to be resolved in the near future.

On motion of Melvin Rubin the following resolutions were adopted: (1) To inform Chesebrough-Pond's of our dissatisfaction with misleading advertising on Vasaline Hemmorr-Aid, containing vaseline as only active ingredient; (2) To inform Pfizer Laboratories of dissatisfaction with new division which will not sell their branded "generics" directly to independent pharmacies, and which requires chains to apply for bid prices by first telling Pfizer the price they now pay for brand used; and (3) To ask Pfizer to explain price increases to community pharmacies on specific products, while still making these products available to institutions on bid at far lower prices.

LAMPA, the MPhA Ladies Auxiliary arranged a tour of nearby Harpers Ferry Historic Park and the restored Apothecary Shop.

The meeting was adjourned at 3:45 P.M.

Chemical Inducer of Interferon Protects Against Cold Symptoms

A drug known as propanediamine markedly reduces cold symptoms and virus shedding if administered prior to and immediately after exposure to cold-causing virus.

National Institute of Allergy and Infectious Diseases grantees at the University of Illinois College of Medicine, Chicago, found that the effectiveness of propanediamine nose drops could be linked to the drug's ability to induce high levels of interferon.

Abbott Laboratories announced the completion of arrangements designed to increase, by later this year, the supply of heparin.

The company said it expects to be able to more than double its 1976 production as compared to the quantity of heparin it manufactured in 1974.

Last fall, the shortage of this important drug was highlighted in testimony before the Kennedy sub-committee. Abbott has been working for some time with a number of meat processors in establishing facilities and procedures for collecting larger quantities of the raw material from which heparin is isolated.

Heparin is an anti-coagulant drug that is used in open-heart surgery and kidney dialysis. It also is finding increased usage in the routine treatment of pre- and post-operative patients.

Pharmacy Changes

The following are the pharmacy changes for the month of May:

New Pharmacies

Columbia Medical Plan-Pharmacy, Theodore A. Hussey, President; Little Patuxent Parkway at Harpers Farm Road, Columbia, Maryland 21044.

Hank's Pharmacy, E. Guy Dowling, President; 600 Virginia Avenue, Cumberland, Maryland 21502.

Dart Drug Corporation, Hagerstown, Herbert Haft, President; Halfway Boulevard Shopping Center, Hagerstown, Maryland 21740.

Doctors' Hospital-Pharmacy, Michael J. Possoby, Jr., President; 8118 Good Luck Road, Lanham, Maryland 20801.

Changes of Ownership, Address, Etc.

None.

No Longer Operating As Pharmacies

None.

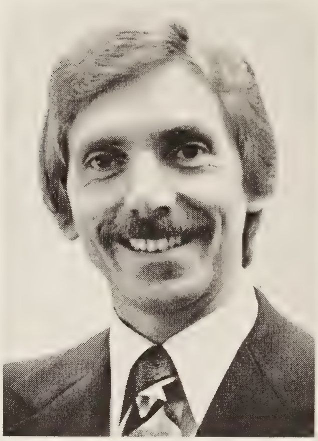
Controlled Substances Act Regulations In USP XIX For Pharmacists And Physicians

Regulations of specific interest to pharmacists and physicians have been excerpted from the Controlled Substances Act and included in USP XIX. The regulations will be updated in supplements to USP XIX.

Specifically, USP XIX includes the following DEA regulations affecting practitioners: Fees for Registration and Reregistration; Requirements for Registration; Applications for Registration; Modification, Transfer and Termination of Registration; Security Requirements; Labeling and Packaging Requirements for Controlled Substances; Records and Reports of Registrants; Inventory Requirements; Continuing Records; Order Forms; Prescriptions; Controlled Substances Listed in Schedules II, III, IV, V; Special Exceptions for Manufacture and Distribution of Controlled Substances; Disposal of Controlled Substances; and Inspections.

USP XIX and NF XIV are required by Maryland to be in each licensed pharmacy by July 1975. The Maryland Pharmaceutical Association is the authorized agent for Maryland. Orders may be placed by mail or by telephoning 727-0746.

Robert E. Snyder Appointed Board of Pharmacy Member



ROBERT E. SNYDER

Robert E. Snyder, Director of Pharmacy Service, Maryland General Hospital, was appointed by Governor Mandel as a commissioner of the Maryland Board of Pharmacy for a five year term. He is the first hospital pharmacist to be appointed to the board.

A 1955 graduate of the University of Maryland School of Pharmacy, Mr. Snyder later served for two years in the U.S. Navy as a hospital corpsman. He joined Maryland General Hospital in 1958 as a staff pharmacist and was appointed Director of Pharmacy Service in 1965.

Mr. Snyder holds active membership in the Maryland Pharmaceutical Association, the Maryland Society of Hospital Pharmacists, the American Pharmaceutical Association and the American Society of Hospital Pharmacists. He is also a Clinical Assistant Professor of Pharmacy at the University of Maryland School of Pharmacy. He has been on the MPhA Board of Trustees and served as president of MSHP.

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Thank you for your cooperation.

Nathan I. Gruz, Editor
Maryland Pharmacist
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Baltimore, Maryland 21201

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Your role in successful

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Successful therapy in urinary tract infection requires patient compliance. But often the patient may not understand the reason for continuing therapy after symptoms initially disappear. Or why she must follow specific procedures in the therapeutic regimen, such as fluid intake and frequent voiding. You are in a position to provide information the patient needs or to recommend when she should speak with her doctor. Your answers can contribute to the patient's peace of mind and successful therapeutic course.

To assist you in your professional role, Roche Laboratories will provide you with a copy of our patient aid booklet on urinary tract infection entitled "Your doctor needs your help." This aid is being utilized by some physicians to explain to their patients the need for compliance with the dosage regimen for Gantanol® (sulfamethoxazole); also, it assists in compliance with other facets of the therapeutic regimen. The booklet may be obtained from your Roche Representative or by writing to the Professional Services Department, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.

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Roche provides an equitable and competitive pricing policy as well as a liberal return-goods policy. Furthermore, Roche keeps the prescribing physician and the pharmacist well aware of the Gantanol qualities through its many informative services.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Acute, recurrent or chronic nonobstructed urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms. ***Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides, especially in chronic or recurrent urinary tract infections.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

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MPhA-APhA WORKSHOP

Monitoring Drug Therapy In Long Term Care Facility

A workshop on "The Pharmacist's Role in Patient Care in the Long-term Care Facility: Monitoring Drug Therapy" was sponsored by the Maryland Pharmaceutical and American Pharmaceutical Associations at Holiday Inn Airport on April 17, 1975.

The purpose was to provide the pharmacist with information which will (1) promote a better understanding of the chronically-ill patient, and (2) reveal the processes involved in, and usefulness of, patient monitoring activities.

A monitoring process (as described in the workbook issued to each person in attendance), with its focus on the patient, is used to make the pharmacist aware of his total input—beginning with the physician's order and ending with the review of the patient's response to the drug.

Following welcoming remarks from Nathan I. Gruz, Executive Director, MPhA, and an overview and introduction from Judy O'Brien, Director of Special Projects, Professional Affairs Division, American Pharmaceutical Association, the program was as follows: "Care of the Aged—Special Medical and Pharmaceutical Needs"—John Gans, Pharm.D., and "Monitoring Drug Therapy—Federal Regulations"— John Gimon, R.Ph. These presentations were followed by workshops for pharmacists, nursing home administrators, nurses and allied health professionals conducted by the workshop faculty: John Gans, David S. Roffman, Thomas H. Wiser and Robert J. Michocki.

The program concluded with a review and panel discussion. David S. Roffman was moderator and panelists were Dr. Gans, Mr. Gimon and Miss O'Brien.

The program objectives were:

1. To assist the pharmacist in formulating and using a systematic approach to patient monitoring which will enable him to assume the roles which are indicated in the new Skilled Nursing Facility Regulations.
2. To enhance the pharmacist's communications abilities with the patient and with other health care professions.
3. To familiarize the nursing home administrator and/or director of nurses with the pharmaceutical services available to their facility, thus assuring optimal communication and implementation of programs from the pharmacist.

The assistance and cooperation was received from the HEW Regional Office in Philadelphia.

(The workshop was supported through a contract between the American Pharmaceutical Association and the Division of Long-Term Care, Bureau of Health Services Research, Health Resources Administration, U.S. Department of Health, Education and Welfare.)

Baltimore Metropolitan Pharmaceutical Association

Controlling The Forged Prescription Problem

"Controlling the Forged Prescription Problem" was the subject of the May 15 meeting of the Baltimore Metropolitan Pharmaceutical Association held at the Towson Plaza Garden Room. President John E. Padousis presided.

Philip P. Weiner, who has been active in trying to develop solutions for curbing diversions of controlled drugs resulting from forged prescriptions, was program chairman for the evening.

The panelists were Floyd Pond, Division Chief, State District Prosecutors, Lt. Lee Tomlin, Chief Narcotics Division, Baltimore City Police Department and James P. Brown, Chief Division of Field Investigation, Medicaid Compliance Administration.

The meeting addressed itself to a comprehensive overview of what is needed at all levels to control the problem of forged prescriptions including clarification of the responsibilities of pharmacists and the cooperation needed between all agencies.

The panelists recommended the following actions: do not give back forged prescription orders to the person presenting the orders and call the police emergency telephone number in your area (333-2222 in Baltimore City).

Also discussed was the need for liaison with the chief judge and the Administrative Judge in Baltimore. In addition prosecutors should urge judges not to grant trial continuances that are requested by defense attorneys.

The regular business meeting followed. Reports included a final legislative review of the 1975 session of the state legislature, new Medicaid programs and the latest information on MAC proposals by the Department of Health, Education and Welfare.

Instructions to BMPA delegates to MPhA convention were also discussed.

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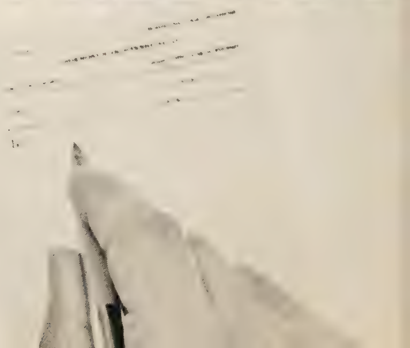
Bioequivalence



the weight of scientific opinion:

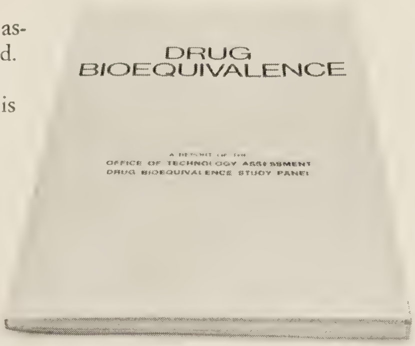
Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."


DRUG BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:
(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

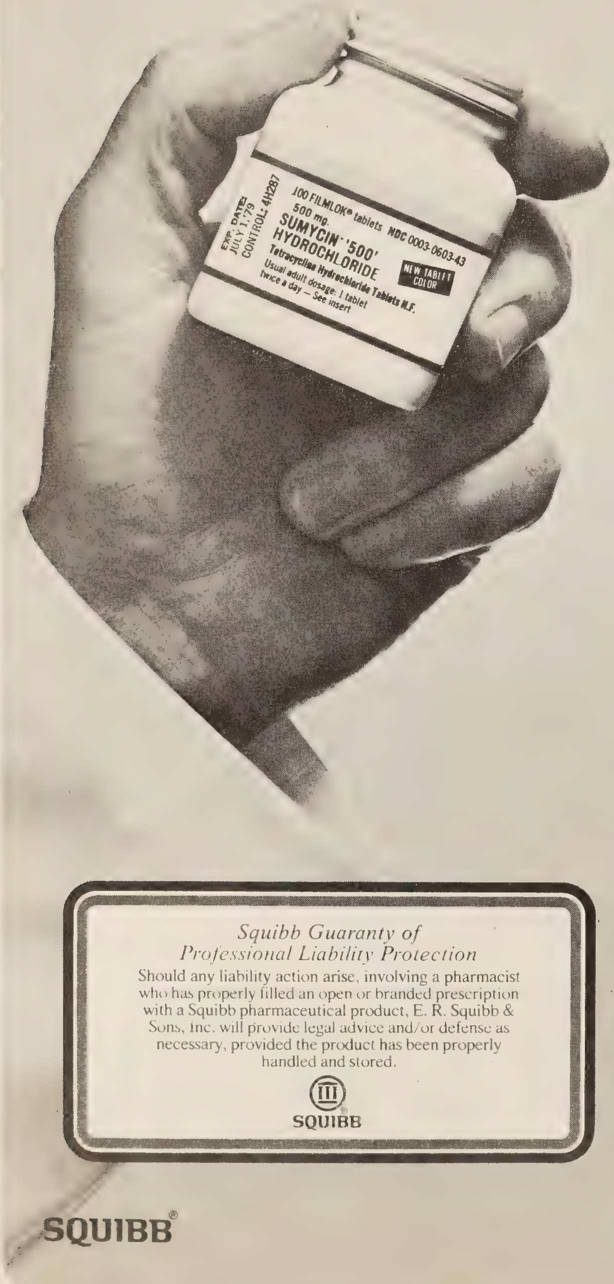
P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

protecting the integrity of the Rx's you dispense

When the decision is yours...

REACH FOR THE NAMES THAT PROTECT YOUR NAME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University of Maryland School of Pharmacy

Reunion of Class of 1950

Martin's West, Sunday, April 13, 1975

Names from the top:

Alfred L. Davis, Donald O. Fedder, John L. Cunzeman, Jr., Robert M. Caplan, Dudley Demarest, Louis Lindenbaum, Morton B. Cohen, Paul M. Carter, Allan B. Shenker, Harry Payne, Victor J. Sugar, Robert A. Harnish, Bernard C. McDougall, Richard T. Harman, Robert K. Moler, Paul Pumpian, Warren A. Gronert, Zach Turner, III, Stanley J. Yaffe, Howard C. Stauffer, Jerome B. Warren, William B. Jackson, Jr., George L. Kelly, Marvin M. Lachman, Walter P. Macek, Phyllis Brill, Vincent J. Regimenti, Harold H. Mazer, Albert Pats, Alvin Stark, Mayer N. Freed, Henry Schwartz, Donald Levy

The School of Pharmacy, University of Maryland at Baltimore, awarded sixty-two bachelor of science degrees in pharmacy at commencement exercises Thursday, May 29 at 3 p.m. at the Baltimore Civic Center.

Of the 62 pharmacy graduates, 19 are women, 3 are from foreign countries and 4 are non-residents of Maryland. The three students from other countries are: Christine Bell, Great Britain; David Porter, Canada; and Nabila Ebrahim, Egypt. Two of the graduates—Christine Bell and Angela Rusk—will be entering the School of Pharmacy's new Pharm.D. program this fall.

"This is the last small class graduating from the School of Pharmacy," said Dr. Dean E. Leavitt, assistant dean for student affairs. "Future classes will be graduating approximately 80 students."

School of Pharmacy

Two graduating students of the School of Pharmacy received degrees after completing pharmacy degrees in their native countries. Nabila Ebrahim is a graduate of the Alexandria University of Egypt. She completed three years at the University of Maryland in order to graduate and hopes to work as a community or hospital pharmacist in the Baltimore area. Chris Bell is a graduate of London University's School of Pharmacy. She completed one year in Maryland to receive a degree and she will be entering the School of Pharmacy's new Pharm.D. program

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So, next time a customer asks for a package of condoms, recommend the best...sell him NATURALAMB skins. The extra sensitivity is worth more. Your customer will be pleased and your profits will be higher. That's why you should stock up on extra sensitive, extra profitable TROJAN brand NATURALAMB.

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*According to National Survey Organization.

OUI
Playgirl
THE MAGAZINE FOR WOMEN
PENTHOUSE
ENTERTAINMENT FOR MEN
PLAYBOY

this fall. Both have found differences in their pharmacy educations here and in their native country.

Grads Continue at School

Two School of Pharmacy graduates—Chris Bell and Angela Rusk—will begin the new Doctor of Pharmacy (Pharm.D.) program at UMAB this fall. This two-year program will produce practitioners, rather than researchers, who will apply scientific knowledge of drugs in practical clinical situations. Only six students will be in the program.

* * *

Tim Fuller, instructor in the division of clinical pharmacy at the School of Pharmacy, University of Maryland at Baltimore (UMAB), received a $1500 Roche Hospital Pharmacy Research Grant to fund a study of the impact of clinical pharmacists in antibiotic prescribing.

The title of the study is "Clinical Pharmacy and Drug Utilization Review in the Pursuit of Rational Drug Therapy: A Study of the Pharmacist's Role as a Effector Mechanism in Antibiotic Prescribing."

Basically, this is a controlled study of 100 surgical patients and what antibiotics were prescribed under certain clinical conditions. Mr. Fuller began the study while a graduate student at Ohio State University.

The main research was done in Ohio. In 50 surgical patient cases, doctors used consulting clinical pharmacists before prescribing antibiotics. In the other 50 cases, clinical pharmacists were not consulted.

Mr. Fuller came to UMAB last July and is finishing up the project and evaluation here.

The study is currently being evaluated by four specialists in infectious diseases. They are looking at the appropriateness of the therapy, the factors involved in the selection of the antibiotics, and the input of the clinical pharmacist.

Glaucoma Seldom Warns Of Its Presence

Although anyone of any age can get glaucoma, an estimated one out of every 50 persons over the age of 40 has the disease, according to the American Medical Association. Glaucoma is produced by a build-up in pressure in the eye, accompanied by an imbalance and impairment of the flow of eye fluids.

The four danger signs the physician looks for are: gradual or sudden loss of side vision; frequently but unsatisfactory changes in glasses; blurred or foggy vision; rainbow-like halos around lights. The disease is usually detected during an eye examination when tension in the eyeball is measured with a simple, painless test.

"If discovered early, progress of the disease usually can be checked and the remaining vision saved through treatment," the AMA reports.

SCODAE

"The community needs to be educated about drugs and their capacity for beneficial and harmful effects," says Tony Tommasello, faculty liaison of the School of Pharmacy at the University of Maryland at Baltimore (UMAB) to the Student Committee on Drug Abuse Education (SCODAE).

SCODAE is a volunteer organization of pharmacy students at UMAB who, with faculty support and guidance, are committed to contributing their knowledge and personal talents in educating the community about drugs.

The organization has a dual role: 1) community outreach—pharmacy students prepare programs for schools and community groups on drug and alcohol abuse education; and 2) *Pharm-Alert*—a newsletter published to educate Maryland pharmacists about street drugs.

Established six years ago, SCODAE's role is ever-expanding. "We are more and more going out into the community to talk to groups about drugs," says Joe Fallon, fourth-year pharmacy student and SCODAE chairman.

This year alone, SCODAE has talked to more than 50 groups in schools in both Baltimore City and County, churches, neighborhood centers and hospitals. The organization was represented at the Baltimore City Fair last September, and students present a weekly program at the Baltimore City Jail. Fifth-year student Henry Kern is the SCODAE coordinator and arranges all community programs.

Pharmacy students may join SCODAE in the third-year of their five-year professional degree program. "This is basically an education year," explains Joe. These students must do a literature search on some topic such as street drugs, venereal disease or over-the-counter drugs. The searches keep all SCODAE members up-to-date on current drug literature.

Students in SCODAE must be evaluated before they can speak to the public and this is usually done in their fourth or fifth year. In order to reduce the amount of misinformation given to the public, SCODAE members are required to address fellow students on a drug abuse or alcoholism topic of their own choice. They are then judged by their peers on the accuracy of their presentation and their ability to field representative questions.

SCODAE speakers must be aware of all aspects of drug abuse including: drugs of abuse and how used, physiological response to these drugs, treatment available to those addicted, and problems arising from drug abuse.

"Our audiences have given us good receptions. They are usually very open in their discussions with us," says Joe. Although SCODAE usually presents short talks to groups, it has developed a five-hour program for schools. "This is a comprehensive program about drugs. We present a one-hour program each day for five days," explains Mr. Tommasello. "The objective of the program is not to prevent drug abuse, but to educate students about drugs and how they affect the body," he adds.

SCODAE's second responsibility, *Pharm-Alert,* is mailed to over 3500 pharmacists in the state of Maryland three times a year. Nurses, medical students and others who request are also on the mailing list.

"We publish this newsletter because most pharmacists don't know much about drug abuse," explains Mr. Tommasello. Articles in past issues have discussed the pill and diabetes, marijuana, hallucogens, alcoholism, and fads such as Vitamin E. *Pharm-Alert* is edited by Joe and fifth-year student Carol Rosenberg.

For the time the students put into SCODAE, they are eligible to receive as many as three credits toward graduation. The number of credits awarded is determined by a committee consisting of SCODAE's chairman, program director, newsletter editor and faculty liaison.

Currently about 20 pharmacy students are active in SCODAE. "We also would like to involve students in other areas such as nursing, medicine and social work," adds Joe.

SCODAE does have plans to expand even more in the future. "We would like to put together some audio-visual aids and/or a slide show that could be presented to groups," says Mr. Tommasello. A non-profit organization, their program is funded by donations from pharmaceutical houses, alumni and groups they have talked to. The school of Pharmacy provides "invaluable" office space and clerical assistance.

"A drug education program has always been needed in the community," concludes Mr. Tommasello, "and I believe these pharmacy students are the most qualified to present such a program."

For information on SCODAE and to arrange programs, call (301) 528-7513 or write to SCODAE, School of Pharmacy, University of Maryland, 636 W. Lombard Street, Baltimore 21201.

PARAPLEGIA—Each year, spinal cord injuries add an estimated 5,000 to 10,000 new persons to the Nation's more than 100,000 paraplegics. Many programs initiated by the National Institute of Neurological Diseases and Stroke are aimed at reducing these statistics.

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"How's your back today?" . . . "Did the antacid work?"

Sound familiar? Such questions are common in the pharmacy today, showing that the pharmacist—as a key member of today's health team—is interacting with his patients/customers because he is deeply concerned.

"Mrs. Jones, did you take your high blood pressure pills today?"

An especially important question, because more and more physicians are treating hypertension earlier and more vigorously to help reduce the risks of eventual organ damage. Missed medication spells danger, since such neglect may become a habit. Many pharmacists consider it their professional responsibility to interact positively with patients/customers on advice concerning adherence to antihypertensive regimens.

Such opportunity for interaction will increase in the months and years ahead as more patients come into the treatment system. Because the problem is so tremendous—23 million Americans are hypertensive, yet only half are detected and only an eighth are under adequate treatment—mass screening efforts have been organized throughout the country.

For example, CIBA has been conducting CHEC (Community Hypertension Evaluation Clinics) programs for more than a year across the nation. Many thousands screened, many thousands referred to their physicians.

CIBA is also launching a series of hypertension-oriented seminars for pharmacists' postgraduate education as part of our commitment to meet your needs.

The challenge is before us. Now is the time for true interaction to solve what is now recognized to be a major national health problem.

CIBA

2/4850

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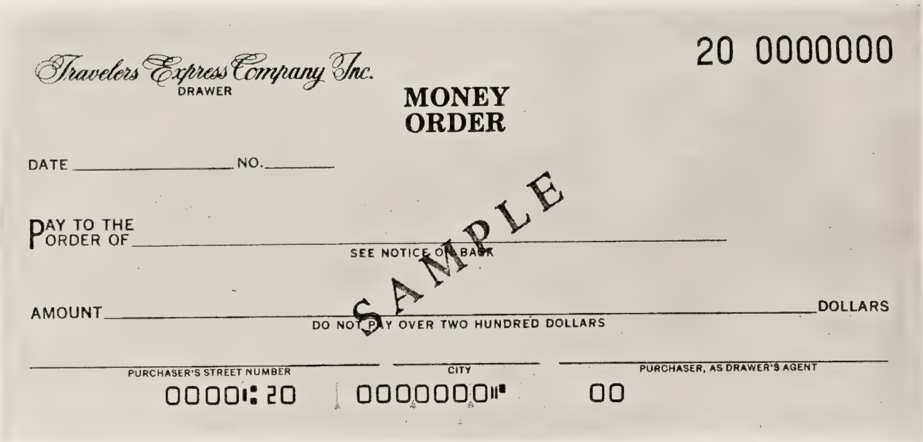

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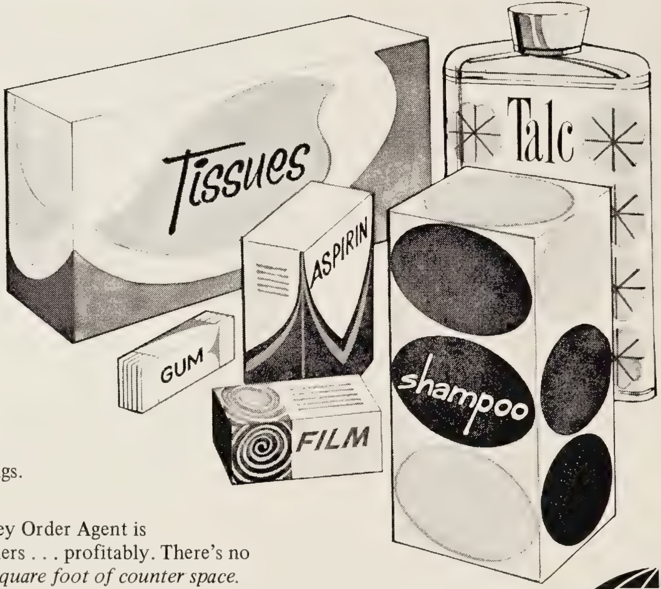

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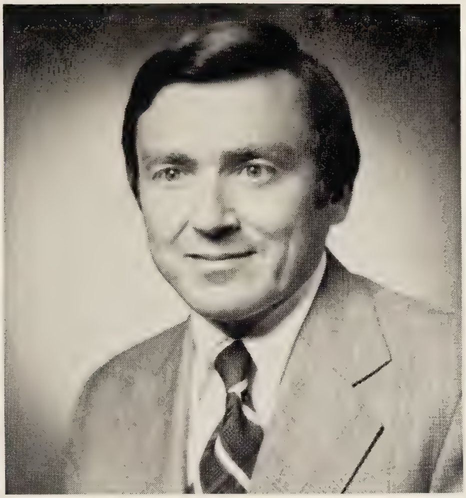
Noxell Announces Election of New Vice President



E. H. Levering

Noxell Corporation of Baltimore, Maryland, has announced the appointment of E. H. Levering to the position of Vice President and Director of Sales. He is responsible for the direction of domestic sales of Noxzema and Cover Girl products, as well as the Lestoil brand, reporting directly to Marvin L. Hathaway, Senior Vice President and Director of Marketing.

Mr. Levering joined Noxell in 1966 as Western Field Sales Manager, was promoted to National Field Sales Manager and then named General Sales Manager in 1971. He was formerly affiliated with Lehn & Fink Products Corporation and Helene Curtis Industries.

Mr. Levering holds a Bachelor of Business Administration degree from the University of Michigan.

Gilpin Announces Promotion Of Harrison L. Leach

The Henry B. Gilpin Company has announced the election of Harrison L. Leach to the office of Vice President for Retailer Services of Gilpin Wholesale Drug Company, a wholly-owned subsidiary with wholesale drug distribution centers located in Baltimore, Maryland; Dover, Delaware; Indianapolis, Indiana; Memphis, Tennessee; Norfolk, Virginia; and Washington, D.C. In addition, Mr. Leach has been appointed to serve as a member of the Board of Directors of Sentry Drug Centers, Inc., also a wholly-owned subsidiary of The Henry B. Gilpin Company, offering a complete drugstore franchise system which combines the advantages of a timely concept in modern marketing with advanced techniques for implementing this concept to achieve operating economy and maximum consumer impact.

Prior to coming to Gilpin in 1969, Mr. Leach had 20 years experience in sales management, marketing, merchandising, and franchising/dealer sales, including 16 years with Liggett/Rexall directing cooperative retail merchandising methods for promotional advertising. Since joining Gilpin, in addition to managing the Care Drug Center System, Mr. Leach collaborates with Sentry Drug Centers, Inc. and Gilpin's centralized sales operations for implementing new concepts in merchandising and business development.

Gilpin services for retailers include Datarex . . . a merchandising and inventory management system for prescription departments and health and beauty aids; Care . . . a voluntary chain with cooperative advertising and tailored merchandising programs; and Tip Top . . . the processing of accounts receivable for retailers. In addition, Mr. Leach is responsible for directing and implementing additional stages for all retail services commensurate with the needs of Gilpin's retail customers.

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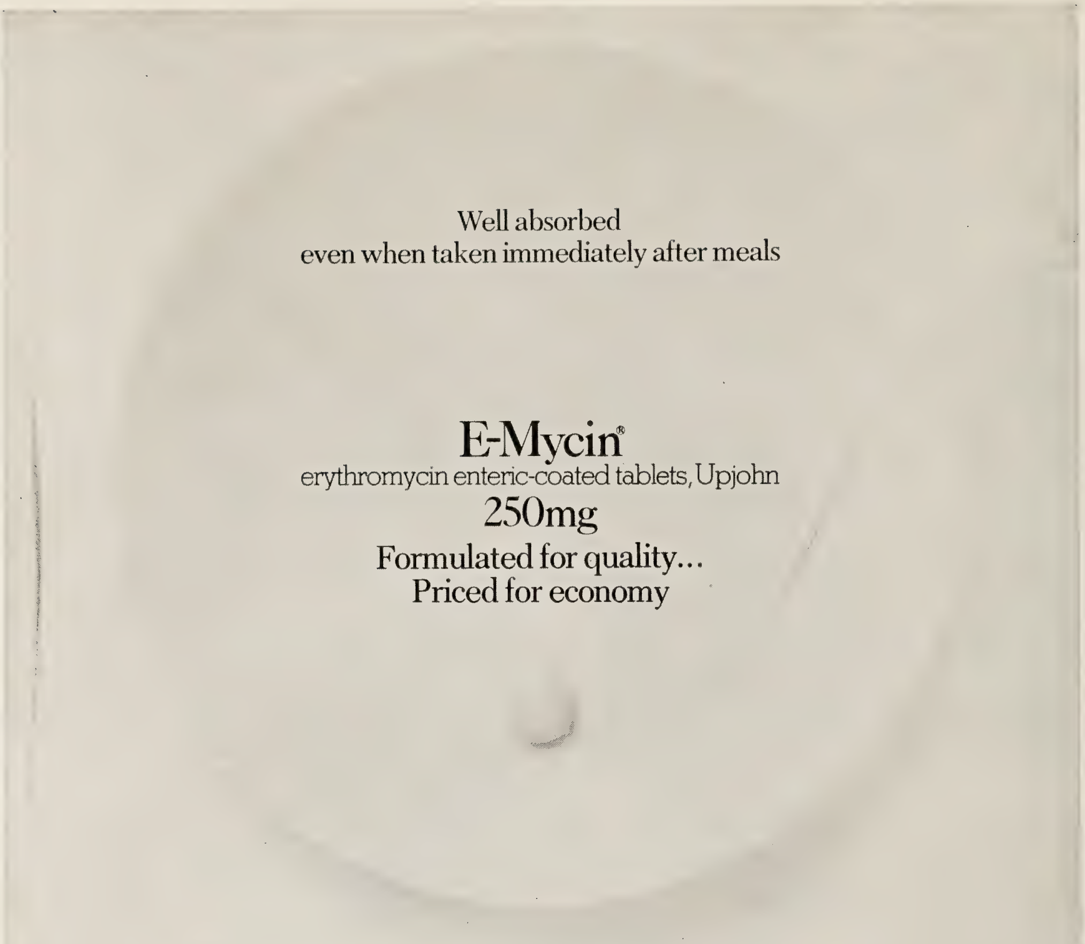
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E-MYCIN TABLETS—250 mg—For Oral Administration (erythromycin enteric-coated tablets, Upjohn) E-Mycin Tablets are specially coated to protect the contents from the inactivating effects of gastric acidity and to permit efficient absorption when administered either immediately after meals or when given between meals on an empty stomach.

Indications:

Staphylococcus aureus: Acute infections of skin and soft tissue of mild to moderate severity. Resistance may develop during treatment.

Diplococcus pneumoniae: Upper respiratory-tract infections (e.g. otitis media, pharyngitis) and lower respiratory-tract infections (e.g., pneumonia) of mild to moderate degree.

Mycoplasma pneumoniae (Eaton agent, PPLO): In the treatment of primary atypical pneumonia, when due to this organism.

See package insert for other indications.

Contraindication: Contraindicated in patients with known hypersensitivity to erythromycin.

Warning: Safety for use in pregnancy has not been established.

Precautions: Erythromycin is principally excreted by the liver. Caution should be exercised in administering the antibiotic to patients with impaired hepatic function. Surgical procedures should be performed when indicated.

Adverse Reactions: The most frequent side effects of erythromycin preparations are gastrointestinal, such as abdominal cramping and discomfort, and are dose-related. Nausea, vomiting, and diarrhea occur infrequently with usual oral doses. During prolonged or repeated therapy there is a possibility of overgrowth of nonsusceptible bacteria or fungi. If such infections occur, the drug should be discontinued and appropriate therapy instituted. Mild allergic reactions such as urticaria and other skin rashes have occurred. Serious allergic reactions, including anaphylaxis, have been reported.

Treatment of overdose: The drug is virtually nontoxic, though some individuals may exhibit gastric intolerance to even therapeutic amounts. Allergic reactions associated with acute overdosage should be handled in the usual manner — that is, by the administration of adrenalin, corticosteroids and antihistamines as indicated and the prompt elimination of unabsorbed drug, in addition to all needed supportive measures.

How supplied: 250 mg — in bottles of 100 and in unit-dose packages of 100 enteric-coated tablets. Caution: Federal law prohibits dispensing without prescription. *For additional product information, consult the package insert or see your Upjohn Representative.*

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

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Maryland Society of Hospital Pharmacists

April Meeting

The M.S.H.P. meeting for April was held at the University of Maryland Hospital in Gordon Wilson Hall. The meeting was jointly sponsored by the American Cancer Society and the M.S.H.P. The normal business meeting was dropped for the evening as four speakers addressed the M.S.H.P. on various subjects relating to cancer. Mr. Clarence Fortner of the Baltimore Cancer Research Center opened the meeting. Dr. Peter Wiernick and Dr. John Levi spoke on the topics of "Carcinoma of the Breast and Hodgkin's Disease," respectively. Dr. Stephen Schimpff spoke on "The Importance of Support in Cancer Dilemmas" and Mr. William Grove spoke on "Cancer Chemotherapy—New and Old." The program proved to be an excellent opportunity for all those attending.

Roche Grant

Tim Fuller of the University of Maryland School of Pharmacy recently received a $1,500 Roche Hospital Pharmacy Research Grant to study the impact of clinical pharmacists in antibiotic prescribing. He is the third pharmacist from Maryland to win such a grant from Roche in the past five years.

Upjohn Unveils Improved Suspension Process

Aqueous suspensions can be produced efficiently in larger quantities and in less time by a new process developed by The Upjohn Company. Details of the improved technique were described at the American Pharmaceutical Association's annual meeting by G. G. Smith, Ph.D., D. E. Fonner, Ph.D., and J. C. Griffin, Ph.D., of Upjohn's pharmaceutical manufacturing development staff.

The key to the large-scale suspension manufacturing process, the Upjohn scientists reported, is an annular, multi-nozzle water jet eductor which assures rapid wetting and dispersion of even difficult-to-wet powders. Intense mixing action is produced as the multiple high-velocity jets of recirculating water suspension coverage with powder ingredients in the mixing section of the eductor. Fluid flow through the nozzles creates a vacuum which draws powder from a simplified feed system, thus eliminating the need for premixing powdered ingredients.

Upjohn's initial application of the water jet eductor system has been in the manufacture of an anti-diarrheal suspension. With the improved process, batch size has been increased from 3,785 to 40,000 liters. Manufacturing time has been reduced from more than 15 hours to about six to eight hours.

Pharmacist Should Know Extra-Cardiac Massage

First aid to a victim of suspected cardiac arrest must be initiated immediately. After about five minutes the effectiveness of cardiac massage is decreased while the potential for permanent damage to the brain due to lack of oxygen is greatly increased. Since the pharmacist is often the first health care professional consulted in an emergency, it is importrant that he be competent in this potentially lifesaving technique. Instructions for administering extracardiac massage appeared in the *Illinois Pharmacist* (38:281, August, 1974):

Signs and Symptoms of Cardiac Arrest:

Unconsciousness, no heart beat, or a very faint, rapid beat. No pulse at the wrist or neck. Cessation of breathing. Enlarged pupils.

Procedure:

1. Place the victim on his back and on a *firm* surface use floor (as opposed to a bed).
2. Stand or kneel at right angles to the victim's chest.
3. Note: It is necessary to perform mouth to mouth resusitation simultaneously with extra-cardiac massage. If there are two people present, one should proceed with resusitation while the other performs extra-cardiac massage. If no one else is present, stop massage every 30 seconds and give resusitation (about four deep breaths).
4. FOR ADULTS: Place the heel of one hand on the lower third of the breast bone (between the breasts) with the heel of the other hand on top of it. Apply a firm pressure (70-90 lbs.) so as to move the breast bone about two inches downward, toward the spine. Repeat once every second, but allow the chest to expand between compressions.

   FOR CHILDREN: Apply less pressure by using the heel of only one hand.

   FOR BABIES: Apply moderate pressure by using the tips of the fingers of one hand, depressing 80-100 times per minute.
5. You must continue both massage and resusitation until medical help is obtained.

Signs of Proper Administration:

Return of a pulse to wrist or neck with each compression; natural breathing attempts.

Reprinted from Academy/GP, Publication of the Academy of General Practice of the American Pharmaceutical Association

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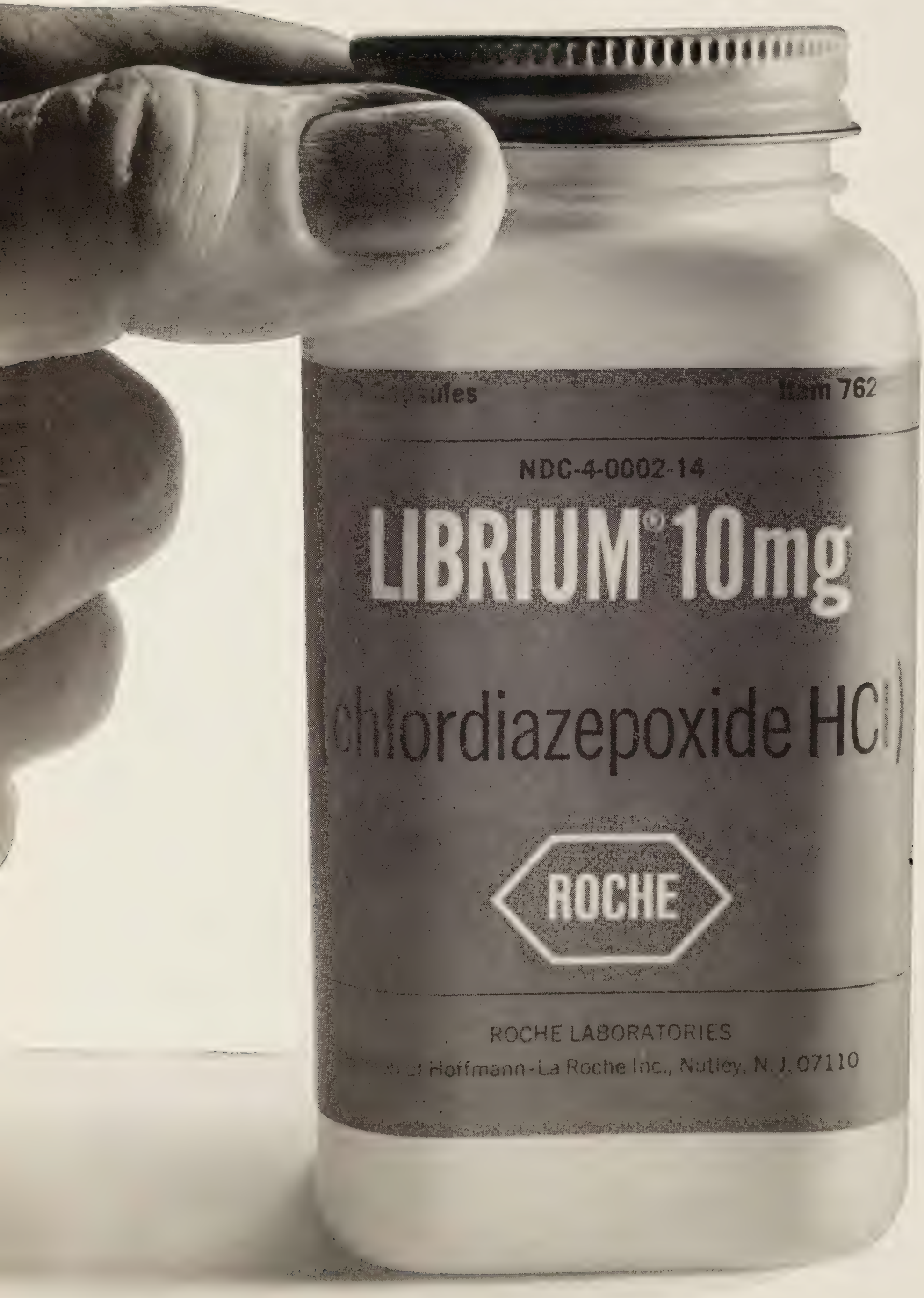
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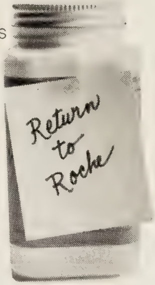
The New Environment of Pharmacy

To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy,* will keep you continuously informed on a wide range of pertinent subjects—new governmental regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, N.J. 07110.

Liberal Return Goods Policy



Roche understands the difficulties that a busy pharmacist has in maintaining a proper inventory. Prescription demand for Librium (chlordiazepoxide HCl) tends to minimize any expiration problems for this product. For other Roche products that may be outdated or discontinued, the Roche return-goods policy expedites replacement and enables you to keep your stock up to date.

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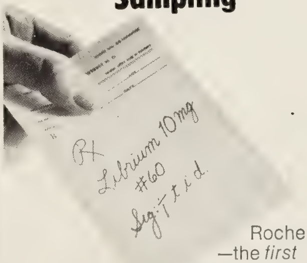

Roche—the *first* pharmaceutical house to discontinue routine sampling to physicians—believes that the dispensing of drugs by the pharmacist contributes to better control of drug usage.

And the Roche commitment to product excellence is your assurance of uniformly high quality.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

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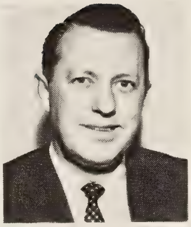
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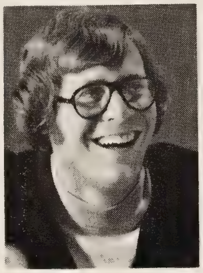
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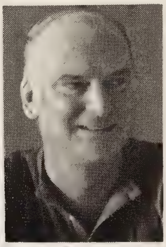
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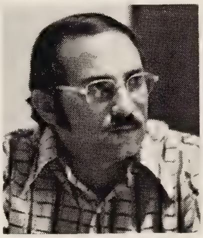
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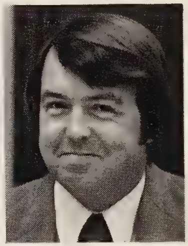
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MPhA Members In The News

MPhA members DR. C. JELLEFF CARR and DR. WILLIAM J. KINNARD, JR. were elected 1975 Fellows of the APhA Academy of Pharmaceutical Sciences.

The Notre Dame Preparatory School Career Day for 1975 included a presentation on "Pharmacy as a Career" by Executive Director, NATHAN GRUZ.

"The Consumer and the Fixed Income" a symposium sponsored by the Office of the Attorney General State of Maryland, the Baltimore Federal Executive Board and College of Notre Dame of Maryland was addressed by DONALD O. FEDDER, Chairman MPhA Pharmacy Consumer Affairs Committee, on "The Cost of Medicine."

Medicine Bottles: Item in the Baltimore Evening Sun, column "Direct Line."

Medicine Bottles

I'm certain I'm not the only person who has difficulty with the new caps for prescription medicine containers. The instructions say to press down and then turn top to right. Only rarely do I accidentally strike the right combination but usually I require a pair of pliers to remove the top. Can anything be done about this? - J.Z.

"Federal law presently requires all pharmacists to place medications in the safety closure containers," replied Nathan Gruz, director of the Maryland Pharmaceutical Association. "However, a physician may indicate on the prescription that the medication should be placed in a regular container for persons having difficulty in opening the safety closure containers. In addition, the patient may also request the pharmacist to use the easier container but the patient may then be required to sign a waiver. Our association is working on revising the federal law because of the many problems associated with this admittedly well meaning statute. For example, many people simply do not replace the safety tops and this may serve to deteriorate the medicine or be affected by moisture causing contamination.

Edward Spearbeck, MPhA member who is Vice President, Professional Services of Drug Fair, Inc., in Alexandria, Virginia, has been named by Smith, Kline & French Laboratories to serve a three-year term on its Pharmacy Advisory Council.

Mr. Spearbeck is a member of the American Pharmaceutical Association, the National Association of Retail Druggists, the Potomac Pharmaceutical Association and the Virginia Pharmaceutical Association Council. He is chairman of the National Association of Chain Drug Stores Pharmacy Affairs Committee and a member of the U.S. Drug Enforcement Administration Pharmacy Committee. Mr. Spearbeck has also been appointed to the Professional Standards Review Organization (PSRO) from the Washington area.

Mr. Spearbeck holds a B.S. degree in Pharmacy from the George Washington University School of Pharmacy.

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The medicine that's lethal to head lice and crabs.

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This is the common head louse, magnified 85 times. It's the first published picture of a head louse taken with a scanning electron microscope. Not very pretty. Neither are body and crab lice. But they're all with us today in epidemic numbers.

Fortunately, the only medicine your customer needs to get rid of lice is A-200 Pyrinate,® America's largest selling pediculicide.

Many people first hear about A-200™ from their pharmacists, who recommend it because they know A-200 Pyrinate works. It kills all three types of human lice and their eggs. A-200 is also safe, fast-acting and pleasantly scented.

And it comes in two shampoo-based forms—traditional, effective Liquid and convenient Gel. Both are available to your customers without prescription.

Finally, A-200 Pyrinate gives you an excellent profit. Suggested retail: $2.29 for the Gel; $1.98 for the Liquid.

The national lice epidemic continues to increase, so stock up now. For an outbreak or a single case, recommend A-200. It's the medicine that's lethal to lice and crabs. And very profitable for you.

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obituaries

Dr. Frank J. Slama

Dr. Frank J. Slama, 73, retired professor and head of the Department of Pharmacognosy at the University of Maryland School of Pharmacy, died May 14, 1975, after an illness of several months. He was Secretary Emeritus of the Alumni Association of the School of Pharmacy.

A native of Baltimore, he graduated from Baltimore Polytechnic Institute in 1919 and worked as a draftsman for two years before entering the pharmacy school. There, he earned five degrees: Ph.G., 1924; Ph.C., 1925; B.S. in Pharm., 1928; M.S., 1930; and Ph.D., 1935. He later did graduate work at Ohio State University.

During his student days, he worked in drug stores and also as a musician. He played the piano at the Celestial Chinese Restaurant and for private gatherings and the trombone in marching bands. In later years, he continued his interest in music, composing several pieces.

Dr. Slama retired in 1970 after nearly 45 years on the faculty of the school of pharmacy. Dr. Slama was a member of the Maryland Pharmaceutical Association and its Travelers Auxiliary as well as the Wedgewood Club. He was a charter member of the Rho Chi honorary pharmaceutical fraternity.

A life member of the American Pharmaceutical Association, he was a former president of its Baltimore Branch. He had also headed the old Plant Science Seminar, and the Baltimore Veteran Druggists Association.

In 1973, he was named honorary president of the pharmacy school's alumni association which he had served for 15 years as executive secretary. Active with student groups during his teaching career, he was named Honored Alumnus of the school in 1963. He had also been a member of the Fifteen Club of Baltimore.

Dr. Slama is survived by his wife, the former Lillian Kvicala.

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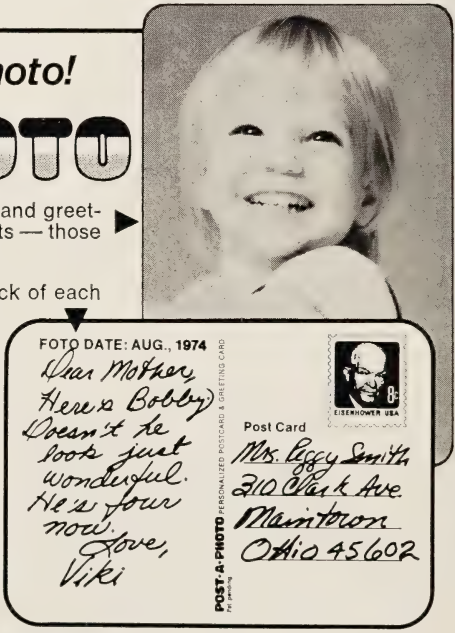

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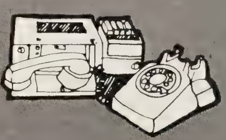

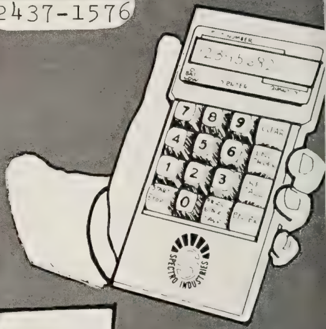

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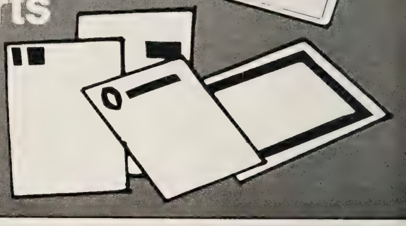

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THE
MARYLAND
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Official Journal of
The Maryland
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JUNE 1975
VOL 51
NO 6

Can Pharmacists Be Constructive Innovators?

Family Physician-Patient-Pharmacist

Annual Swain Seminar Lecture

Pharmacokinetics And Patient Care

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*November 25 — Simon Solomon Pharmacy Economics Seminar —
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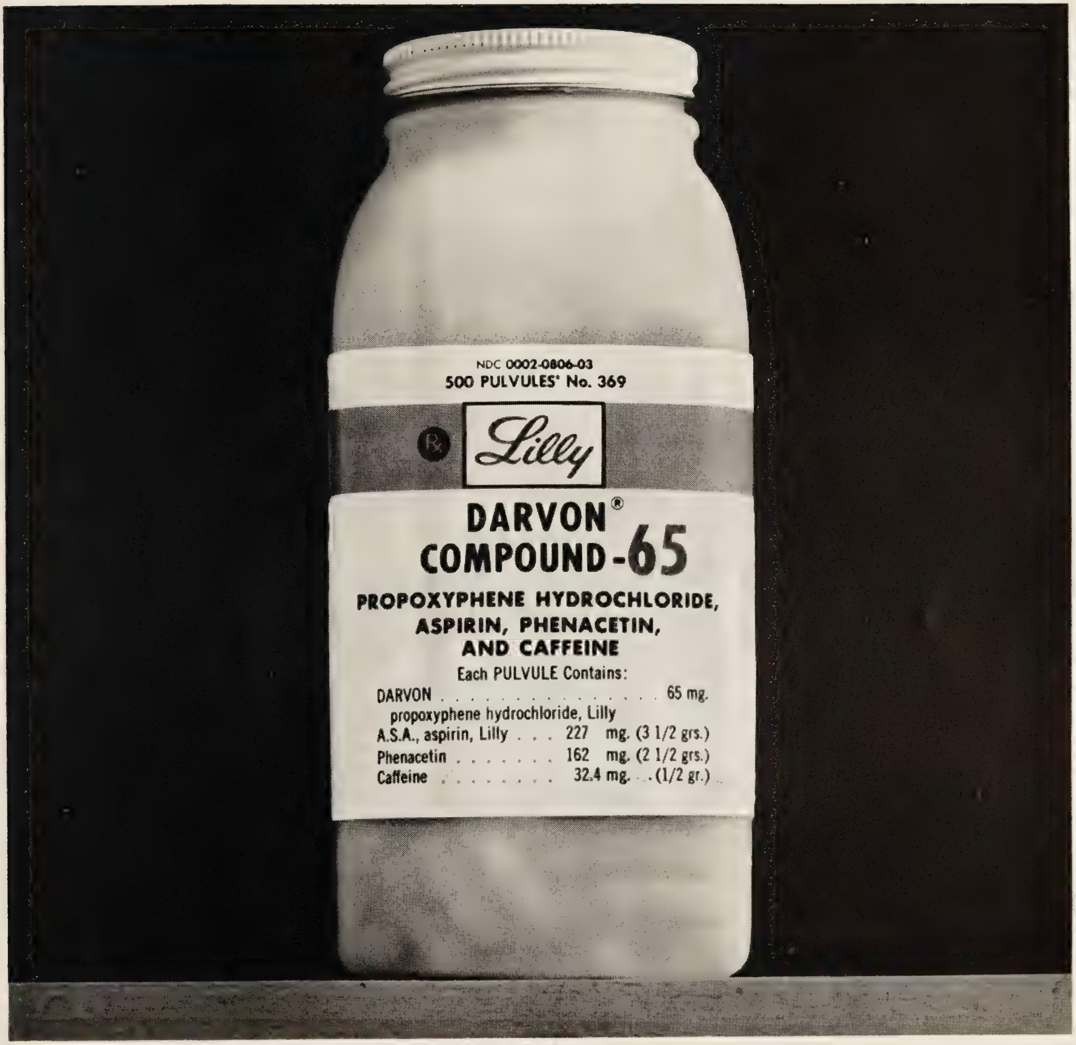
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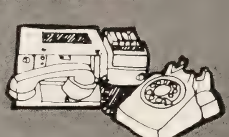

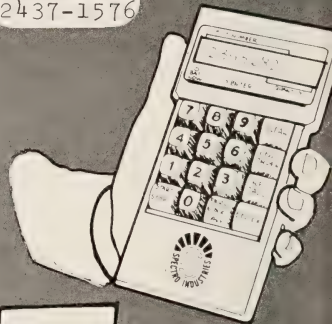

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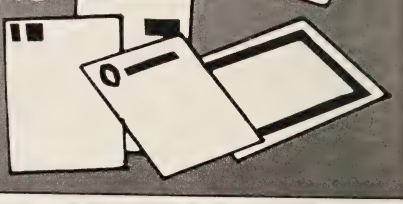

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THE MARYLAND PHARMACIST

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JUNE 1975 VOL. 51 NO. 6

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editorial

Can Pharmacists Be Constructive Innovators? – A Bicentennial Commentary

Milestones of history are always time for thought and introspection. This nation's Bicentennial is certainly such an occasion. When we remember that no other nation can boast of the endurance of a democratic society for 200 years, we can all be justly proud.

An integral part of this wonderful country's tradition is that this is a land of a liberty where the private sector has been and is the foundation of our society. The result has been not the perfect society, but a standard of living for the majority of its citizens that is equaled by no other country. It is the U.S.A. that the world is attempting to emulate.

The frightening development in this country, however, has been the ever-expanding intrusion of the governmental sector in every aspect of our society and in every facet of our lives.

In pharmacy we must try to meet our problems through a private sector based upon enlightened public policy, public service commitment and concentration on contributing to the health care needs of society as a whole and patients as individuals.

Pharmacists are up in arms at various schemes to eliminate the private sector of pharmacy service and replace them with governmental facilities or programs financed by tax funds—public monies that pharmacists themselves contribute to.

Are you concerned about these realities and these increasing threats?

What can *you* do about these developments?

If you are a practicing pharmacist, make sure the patient's health care is your *primary* concern.

If you are the proprietor of a pharmacy, make sure that your pharmacy from external appearance to internal layout, decor, fixtures, displays and signs reflects that you want no doubt to exist that your establishment is foremost a facility to provide health care.

If you are involved in pharmaceutical service to the public, are you part of an assembly line pharmacy or are you a health professional known to your patients as a person and who knows his patients as flesh and blood individuals—not as numbers?

Do you assure yourselves that all your patients' medication—prescription and over-the-counter—is advancing the patient's health state?

Educators—are you in ivory-towers or are you also participating in organized pharmacy to bring your valuable expertise to bear upon the profession's problems and thereby enhance its ability to meet today's challenges?

Pharmacists in allied areas of pharmacy law enforcement, manufacturing, distribution, hospital administration—are you contributing your special knowledge and experience?

Pharmacists, pharmacists—wherever you are—are you mere apathetic observers and witnesses to history or are you doing your fair share to vigorously preserve the best in the profession and and at the same time helping to initiate the innovations that will retain the maximum constructive role for pharmacists in a free, independent health profession?

— Nathan I. Gruz

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NATHAN I. GRUZ, *Executive Director*

June 12, 1975

The meeting was called to order at the Warren House by Chairman Anthony G. Padussis at 10:30 A.M. Communications included:

- Reply from the Maryland Board of Pharmacy regarding status of Secretary of the Board.

- Letter of appreciation from Robert E. Snyder regarding his appointment to the Maryland Board of Pharmacy.

- Memorandum from APhA regarding status of controlled dangerous substances.

- President's Report—Mr. Freiman, member of the state formulary committee, discussed House Bill 1486 affecting drug product selection. He stated more frequent meetings of the committee will be held in order to add more drugs. He attended the Federal Consumer Conference on people with fixed incomes. Donald O. Fedder, Chairman of MPhA Consumer Affairs Committee, participated. President Freiman also attended state Department of Health meeting on MAC and meetings relative to MPhA House of Delegates and the Nominating Committee. He announced that he had been chosen Honored Alumnus by the School of Pharmacy Alumni Association. He conferred with Dr. Peter Lamy, Chairman of the Joint Peer Review Committee. It was understood that MPhA would continue to have its own Peer Review Committee and MSHP would have its committee as well. He spoke on his efforts in contacting APhA regarding the third party problems involving Iron Workers Local #16. He spoke of receipt of letters from Paul Burkhart, President, MSHP, regarding MSHP-MPhA relations and from Dr. Ralph Shangraw regarding OTC drugs labeling. He announced that he had appointed Dr. Shangraw to head a special committee on continuing education for MPhA.

- Treasurer's Report—Mr. Lindenbaum reviewed the Treasurer's report indicating receipts and disbursements in line with budget. Dues income is running above the same period last year. Funds were authorized for painting and refurbishing of the Kelly Memorial Building. The annual CPA report was distributed.

- Executive Director's Report—Mr. Gruz reported on the veto hearings before Governor Mandel and the May and June Board of Pharmacy meetings. Secretary of Health Neil Solomon and Environmental Health Administrator Donald Noren called upon Mr. Gruz to attend several conferences regarding the work of the Division of Drug Control and the Board of Pharmacy. He also participated in the Department Health meeting on state regulation for MAC (Maximum Allowable Cost), the BMPA meeting on forgeries and BMPA Executive Committee. He has been asked by President Freiman to make the presentation of the Honored Alumnus Award to him at the annual Alumni Banquet. Mr. Gruz attended University of Maryland School of Pharmacy Convocation at which Esther Peterson, in charge of Consumer Relations for Giant Food and Pharmacy, delivered the principal address. She was critical of the position taken by both MPhA and the School of Pharmacy on legislation to require expiration date on Rx label. He also attended a hearing before the Legislative Council in Annapolis on regulations for physicians' assistants. It was necessary again to strenuously urge the inclusion of prohibition against prescribing and dispensing of medication by PA's.

- Mr. Gruz announced the results of the mail ballot as follows: President-elect—Melvin N. Rubin; Vice President—Richard D. Parker; Treasurer—Morris Lindenbaum; Trustees: Rudolph F. Winternitz and Robert E. Snyder. Other major activity concerned efforts to obtain freedom of choice of pharmacy for the Iron Workers Local #16 prescription program. Mr. Gruz also reported on the Prince Georges-Montgomery County Annual Installation Dinner at which he served as Toastmaster.

- Membership Report: Total membership was reported as 67 more than 1974. Following a discussion of MPhA of pharmacy student relations, it was the concensus that all possible mailings be sent to students.

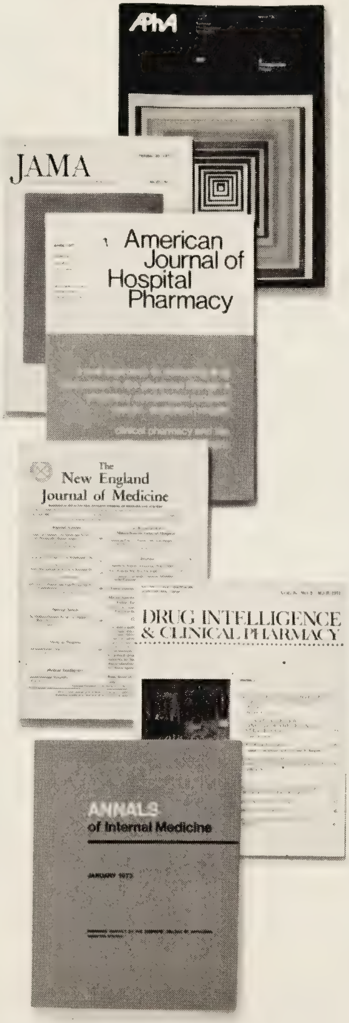
- Convention—Mr. Lubman outlined the convention program and urged attendance by all pharmacists. Work has begun on sites for 1976. He also reported on the seminar tours.

- Legislation—Mr. Rubin reported on the status of the advertising posting laws and proposals regarding co-pay legislation. He recommended the following position that where co-pay is cut or not collected the same consideration should be given to the state under Medicaid. Pharmacies accepting fee in third party programs less than medicaid would charge the same to the state and

a matter of professional interest to the pharmacist
from Merck Sharp & Dohme

there's a great deal being said about hypertension these days...

and it's being taken to heart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JAMA
American Journal of Hospital Pharmacy
The New England Journal of Medicine
DRUG INTELLIGENCE & CLINICAL PHARMACY
ANNALS of Internal Medicine
JANUARY 1973

As a pharmacist, you are well aware that the cardiovascular complications of hypertension can mean early death or crippling disease: congestive heart failure, renal failure, stroke, myocardial infarction.

The prescriptions that you fill for diuretics and other antihypertensive medications are, along with proper diet and weight control, the best preventive measures known against these complications. And the increased number of these prescriptions may have led you to wonder whether the actual incidence of hypertension has risen.

Perhaps it has. But not necessarily. Improved case-finding and physicians' decisions to institute drug treatment at an earlier stage of the disease could also be responsible.

At what reading does hypertension begin?

There are differing views as to where hypertension begins: some physicians say blood pressure readings of 140/90 mm Hg warrant further examination, while others use 160/95 mm Hg as the cutoff. But there is little doubt that a person's risk of developing the complications of hypertension is proportional to his blood pressure level.

Prompt detection and treatment urged

It can be expected that more people will become aware of their hypertension. An estimated 20 million Americans currently suffer from the disease.

A recent report in the *Journal of the American Medical Association* of a study conducted among nearly 23,000 adults employed in the Chicago area revealed that most who had high blood pressure did not know of their condition and that few of those who knew about it were receiving adequate treatment.[1] The editors of the journal urged doctors to "take a more responsible view toward [this] treatable illness."[2]

A growing body of evidence suggests that prompt detection and treatment substantially lower the risk of serious complications. Toward that end, the creation and funding of a National Hypertension Program were announced in 1972 by former Secretary of Health, Education and Welfare, Elliot L. Richardson.

Vital, growing role of pharmacist

Dr. Theodore Cooper, former Director of the National Heart and Lung Institute, which is the focal point for coordinating the activities of this program, views the pharmacist as contributing to its success "both in his capacity as an actual 'health educator' and advisor to the public and in his capacity as a colleague of the prescribing physician."[3]

1. Schoenberger JA, Stamler J, Shekelle RB, Shekelle S: Current status of hypertension control in an industrial population, JAMA *222*:559, Oct 30, 1972. **2.** Hypertension: A neglected phenomenon, editorial. JAMA *222*:579, Oct 30, 1972. **3.** Cooper T: The National Hypertension Program, J Am Pharm Assoc *NS13*:135, March 1973.

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state medicaid be charged no more than private patients are charged. The proposal was adopted. There was then a discussion of legislative interest in the organization of the Board of Pharmacy.

- Prescription Insurance Programs—Mr. Rubin outlined results of meetings with the state regarding a maximum allowable cost proposal. The status of action regarding Teamster Local #355 prescription program and Local #16 Iron Workers was reviewed.

- Board of Pharmacy—There was a discussion of proposed Board of Pharmacy guidelines regarding establishments which remained open while the pharmacy service area was closed. It was moved that MPhA support the existing law and oppose any change in law which would permit pharmacy establishments to remain open with the pharmacy service area closed and seek legal means of maintaining the current law. A policy for using MPhA members as proctors for the Board of Pharmacy exams was approved.

- The matter of contribution to the Frank Balassone Memorial Lecture Fund was assigned to the Finance Committee.

- The Board approved the selection of Anthony G. Padussis as the 1975 Bowl of Hygeia recipient for community service.

- Nominating Committee—Chairman Padussis reported the following recommendations for 1976-77 term to be voted on at the convention for mail ballot. Mr. Rubin previously elected President-elect will be installed as President; for President-elect Richard D. Parker, second nominee Melvin Sollod or Dominic Vicino; for Vice President James Truitt and Stephen Hospodavis; for Treasurer Morris Lindenbaum and Anthony Padussis; Honorary President 1975-76, Frank Block; Trustees one pair: Ronald Lubman and Ben Owens, and second pair: S. Ben Friedman and Robert Koenig; Speaker of the House 1975-76 Irving Kamenetz, Vice Speaker Sam Lichter. For the vacancy of Morris R. Yaffe on the Board of Pharmacy—1) Bernard B. Lachman, 2) Anthony G. Padussis and 3) S. Ben Friedman.

- Convocation Speaker: The report was approved. It was moved that the MPhA recommend to the University of Maryland School of Pharmacy that in selecting a speaker for the annual convocation that if the speaker is affiliated with a pharmacy it should be an organization exemplifying the highest standard of comprehensive personalized patient-oriented pharmacy practice.

- Drug Consultation Guide of the Washington State Pharmaceutical Association. Possibility of distribution as an MPhA project was discussed.

- Mr. Rubin reported on special auxiliary labels for OTC drugs with warning, particularly those that have been previously prescription drugs. MPhA will distribute such labels. Mr. Freiman reported that the drug evaluation committee will center its interest on evaluation of OTC drugs.

- Mr. Gruz reported on the Federal Trade Commission's announcements of investigations regarding prescription drug advertising.

- The meeting called by Speaker Ben Friedman on House of Delegates planning reported that written reports from officers and committee chairman had been requested and the agenda for the House of Delegates meeting at the convention was outlined.

The meeting was adjourned at 2:15 P.M.

New Members

The following applications for membership were approved:

Budne Reinke, Preston, Preston Pharmacy, Inc.
Irving Heneson, Baltimore, CHC Heneson Pharmacy, Inc.
Donald Dagold, Baltimore, Watermont Pharmacy.
Albert Lindenbaum, Baltimore, Lindy's of Dundalk.
Walter H. Abel, Baltimore, Hampstead Pharmacy.
Matthew J. Nevins, Silver Spring, Star O'Nevins Drugs.
Michael Weinstein, Bethesda, The Apothecary, Inc.
Herbert Burns, Baltimore, Howard & Morris.
Bernard Rosenthal, Baltimore, Hayne's Pharmacy.
Norman Levin, Baltimore, Filbus Drug Store.

June 26, 1975

Hilton Inn

The first meeting of the 1975-76 Board of Trustees was called to order at 4:00 P.M. by Chairman Paul Freiman.

- S. Ben Friedman was appointed to fill the vacancy for the balance of the term to 1976 of Mr. Parker and for Robert J. Martin for the balance of the term to 1977 for Mr. Winternitz.

- Mr. Lubman was approved to continue as Convention and Seminar and Tours Chairman.

- The Fountainebleu in Ocean City, Maryland, June 20-23, was approved as the convention site for 1976.

The meeting was adjourned at 4:15 P.M.

New Members

The following applications for membership were approved:

E. Edward Neighoff, Ocean City, Montego Bay Drugs.
Sherman Pritzker, Baltimore, Giant.
Lawrence Abrams, Baltimore, Colonial Pharmacy.

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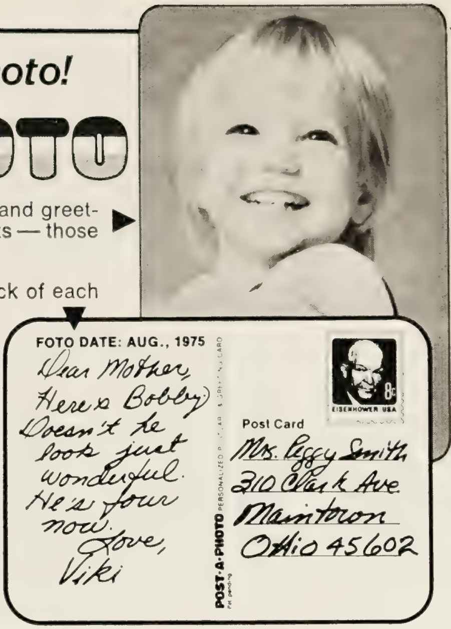

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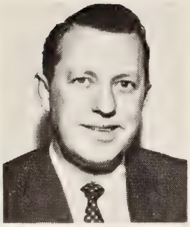
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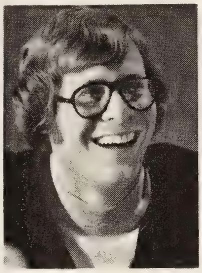
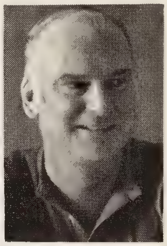

MIKE GERSHEN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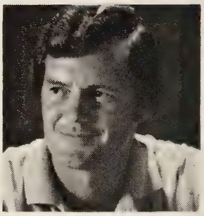
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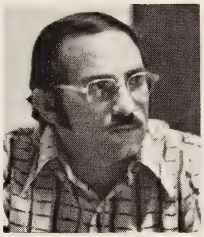
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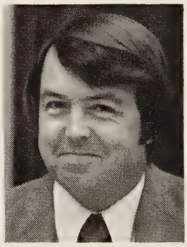
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Swain Seminar Lecture

Family Physician–Patient–Pharmacist

by
LeRoy T. Davis, M.D.
Director, Residency Training
Family Medicine Program
University of Maryland Hospital, Baltimore

First, let me draw your attention to a recent decision rendered by the courts in a malpractice suit. A judgment was made against a physician and a pharmacist because, according to the patient, neither had informed him of the side-effects of the prescribed medication.

In our litigation-conscious society pharmacists as well as physicians are being drawn into the courtrooms to defend their actions. What then can physicians and pharmacists do to assist each other and to perform in a way that is to the advantage of the patient?

As each of you know, historically, the physician wrote or called in the prescription to the pharmacist who dispensed the medication. When one considers the educational requirements of the pharmacist, this was an enormous waste of knowledge and talent which could and should have been utilized to improve the delivery of health care.

What the courts have now said is that you must accept a new responsibility in consort with the physician. The major question that now confronts us is: how can this be done in the most effective and efficient manner?

My personal experience with a member of your profession is an example of cooperation. First, he kept records of prescriptions on patient profile cards, and, second, he kept records of the physicians who wrote the prescriptions. On several occasions when I had written or called in a prescription, I received a call from the pharmacist, asking if I were aware that another M.D. had prescribed the same medication or one which might be contraindicated. Many times I had asked the patient, "What medicines are you taking?" And the answer frequently was, "Why, only what you have given me." On other occasions, I'm sure I did not ask this question but simply referred to the patient's chart. I'm certain that it did not occur to me that my patient could be seeing another physician. How many times the pharmacist averted both potential disaster, as well as real disaster, is difficult for me to estimate.

In years past there were many new drugs on the market each month. It was impossible for me to remember all the information about each of these, but I could always depend upon Jack, my pharmacist friend, to give me the assistance I needed if I decided a patient required that medication. Today there are relatively fewer drugs appearing so it is much easier to keep up with the information, but again two heads are better than one. Thus, I always considered a pharmacist a colleague who was as interested in the patient's well-being as I was. We shared and pooled information for the benefit of our patients.

Should the recent court decisions affect this relationship? I certainly don't think so. Is the court redefining the role of the pharmacist and his profession? Most definitely!

The need for a plan

To describe an analogous situation, one might recall the many court decisions concerning informed consent for surgery. One surgeon lost a case because the patient did not have informed consent, and another lost his case because he spelled out all the risks, making the patient so nervous she required psychiatric care and subsequently sued. How can one win in this atmosphere? Perhaps we won't, but we certainly can try!

First, we must develop a plan, jointly conceived by physicians and pharmacists, to define our separate and joint responsibilities to the patient. To the best of my knowledge this has never been done in a formal way except in some large group practices in California.

This plan must adress itself to such questions as, what side-effects are you to describe to the patient? Are you or the physician going to explain *all* the side-effects, only the *common* ones or only those which are potentially *dangerous?*

Then, how are you going to communicate these to the patient? In written form? What if the patient doesn't read but is too embarrassed to tell you? Orally? How much of your time would this require for 100 prescriptions? How about an audio-cassette, listing the side-effects for each drug? It would require more of the patient's time, and then how many playback stations would you need? The last alternative would be a video-playback, giving the side-effects of the drug. This again would require a substantial investment of both time and money.

Presented at the 15th Robert L. Swain Seminar of the Maryland Pharmaceutical Association, co-sponsored by the University of Maryland School of Pharmacy

Consumer Costs

If such a system were initiated as an edict of the courts, the government or the public, what will be the cost to the consumer?

(1) Pharmacists' time. If you report the side-effects to a patient who is taking five or six drugs, how much time will this require? Are you going to read the package insert to the patient? If so, will it be necessary to interpret some of the technical language because the patient doesn't understand what you are talking about?

(2) Equipment cost and maintenance of one of the above systems. This would involve not only the initial outlay for equipment, but in our sophisticated age of electronics it is necessary to have experts maintain such equipment. The use of experts, of course, would add to the cost of the individual prescription.

(3) Continuing education courses for the pharmacist. *Not* on drugs and contraindications but on communication skills to assist in better informing the patient and establishing rapport with him.

(4) The cost of maintaining more elaborate records, documenting your actions. Some pharmacists are already utilizing patient profile cards which require a more elaborate type of record keeping than has been used previously. This requires more of the pharmacist's time with each patient who presents him with a prescription. These are a few of the costs involved.

Physician-pharmacist interface

The title of this presentation is "Family Physician—Patient—Pharmacist". Let me now address the physician-pharmacist interface. I mentioned before the mutually supportive relationship I had with a pharmacist. Now, suppose you discover that a physician has written a prescription for what seems by any guidelines a prolonged time period. How do you handle this?

Before you answer, I'd like to tell you a little story. A man dies and goes to heaven. St. Peter tells him he must stand in line; and as he goes to the back of the line, a man in a scrub suit with mask and stethoscope comes up to St. Peter, whispers in his ear and passes on into heaven. The man goes up to St. Peter and demands to know why that doctor could go right in and not have to wait like the rest. St. Peter replies, "Oh, that's God, and sometimes he likes to play doctor".

If the physician who wrote the earlier prescription is a God-like character, you have my deepest sympathy. I hope that most are not. What are you to do?

It is incumbent upon you to inform him of your observation. If he is the type of physician we all hope he is, he will thank you and modify his prescription or have the patient go to his office for re-evaluation if he had not seen the patient recently. This can be a kind of quality control for the physician. A computer has been used for this purpose on an experimental basis by the San Joaquin Valley Medical Foundation and has proven to be a very enlightening experience for both the pharmacists and the physicians who were involved in the study.

Another area of cooperative effort under consideration is allowing the community pharmacist to follow hypertensive patient and to regulate his medications. This places the pharmacist in a key role in the delivery of health care. The establishment of some form of feedback between the physician and the pharmacist would be necessary, but this should present no great problem because even now the physician and the pharmacist are in frequent communication. It would necessitate only a formal method of communicating te specific data required by each.

The addition of the pharmacist to this team would most certainly increase compliance of hypertensive patients to their regimes from the present 50%. If a patient knew that before his prescriptions could be refilled his blood pressure would be checked, would this increase compliance? Most definitely! Patients do not like to admit to another person that they haven't taken their prescription or followed the doctors' orders. This would give us all extra exposure to the patient in order to advise him about his condition, as well as to reinforce the regime necessary to improve the longevity and quality of our patient's life.

Now what can the pharmacy profession do to insure that the physician and the patient have the most capable pharmacist with whom to work? Probably a scheme similar to the one established for continuing education of physicians would be a giant step toward this end. For instance, in Ohio to maintain a licence in force, the Ohio Pharmacy Board requires 45 hours of continuing education every three years. This is, of course, not an absolute guarantee, but it is one method of control.

I have presented you with a variety of problems which I as a physician see and have tried to suggest some possible alternative solutions. The most important point I hope you will take with you from this discourse is that you, the pharmacist, are having your role in the delivery of health care redefined, both from within your profession and from without.

The imperatives are here. How you choose to answer them or fight them, I would not presume to suggest, but consider carefully the new roles and relationships which your profession must assume. Now is the time to address them. Don't procrastinate as the medical profession has so frequently done, or you may find your liability insurance costing as much as mine.

University of Maryland School of Pharmacy

Presentation of Honored Alumnus Award
to
Paul Freiman, President, MPhA
by
Nathan I. Gruz, Executive Director, MPhA

At Annual Graduation Banquet of the University Of Maryland School of Pharmacy Alumni Association

May 27, 1975 — Eudowood Gardens

Mr. Chairman, Dr. Kuhn, Dean Kinnard, other honored guests, officers and fellow members of the University of Maryland School of Pharmacy Alumni Association, especially the 50th Anniversary Class of 1925, and friends.

On behalf of the officers, Board of Trustees and all members of the profession of pharmacy in Maryland represented in the Maryland Pharmaceutical Association—the state professional pharmaceutical society—I bring greetings and hearty best wishes for successful careers to the Class of 1975. We wish you—our new professional colleagues—the insight and the wisdom to make decisions that will lead you along constructive pathways of service to mankind through pharmacy.

Paul Freiman (right) receives Honored Alumnus Award from Nathan I. Gruz, Past President, University of Maryland School of Pharmacy Alumni Association.

Although this occasion this evening is primarily in honor of the graduating class, it has become a tradition for this Alumni Association—which is probably one of the most active of the constituent groups of the University of Maryland General Alumni Association—to select an Honored Alumnus to receive its award at the Annual Graduation Banquet.

Just as this award is a great distinction, so I must admit that I felt honored when this year's honoree requested me to make the presentation on behalf of the Alumni Association.

Paul Freiman, is a rare human being who has brought distinction to his profession—a profession he loves. This is what first occurred to me in thinking about my remarks this evening and this is amply brought out by his approach to pharmacy and the people he serves.

Paul is a native of Baltimore who graduated from the University of Maryland School of Pharmacy in 1953. He served two years each in the U. S. Merchant Marine and the U. S. Army.

Paul's professional career has been exclusively as a practitioner in community pharmacy. Since 1963 he has been operating Security Pharmacy in Woodlawn in partnership with his brother Joe, also alumnus of Maryland. I guess Joe also deserves some honor, because of the extra time and for the schedule changes he graciously accepts so that Paul can meet his many time-consuming commitments on behalf of the profession.

Paul Freiman, of course, is completing his term next month as president of the Maryland Pharmaceutical Association. This office is the culmination of a long-time involvement in the affairs of his chosen profession. It began with an active interest in the Alpha Zeta Omega Pharmaceutical Fraternity in school, resulting in his election as Directorum or president for 1960-62 and National Board member for 1962-64. He was recipient of AZO Order of Double Star in 1970.

Thus, the pattern of involvement and dedication, resulting in his recognition by his peers of his qualities of leadership, was initiated.

Paul was one of the first in Maryland to understand the need for continuous life-time professional learning. He was appointed Chairman of MPhA Swain Pharmacy Seminar for 1966-69 and was chairman of the first Continuing Education program for pharmacy in Maryland in 1968.

Paul's interest in the role of the pharmacist in public health resulted in a publicly and professionally acclaimed MPhA VD Awareness Campaign in 1970, of which he was chairman. His efforts produced the State of Maryland Department of Health VD Task Force in 1971, to which he was appointed as the pharmacist representative.

The chairmanship of the MPhA Legislative Committee from 1971-74 and his leadership in 1975 produced constructive legislative programs for pharmacy. Among the noteworthy accomplishments were: a drug product selection and formulary law to permit the pharmacist to select the source of a drug; a requirement for drug manufacturers to disclose the actual manufacturer of a drug product; a freedom of choice of pharmacy act; restricting to phar-

(Continued on page 21)

Sam A. Goldstein, past president Alumni Association, receives 1975-76 Honorary President Award from Charles E. Spigelmire, Grand Marshal.

Alumni Association Officers 1975-76. Seated, Leon Weiner, President and Dorothy Levi, Second Vice President. Standing: l. to r. Charles H. Tregoe, Chairman, Executive Committee; George R. Voxakis, Executive Secretary; William Weiner, Executive Committee; Ronald A. Sanford, Treasurer; Henry G. Seidman, 1st Vice President; Sanford L. Rosenbloom, Executive Committee, and H. Nelson Warfield, Treasurer Emeritus.

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To assist you in your professional role, Roche Laboratories will provide you with a copy of our patient aid booklet on urinary tract infection entitled "Your doctor needs your help." This aid is being utilized by some physicians to explain to their patients the need for compliance with the dosage regimen for Gantanol® (sulfamethoxazole); also, it assists in compliance with other facets of the therapeutic regimen. The booklet may be obtained from your Roche Representative or by writing to the Professional Services Department, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.

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Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

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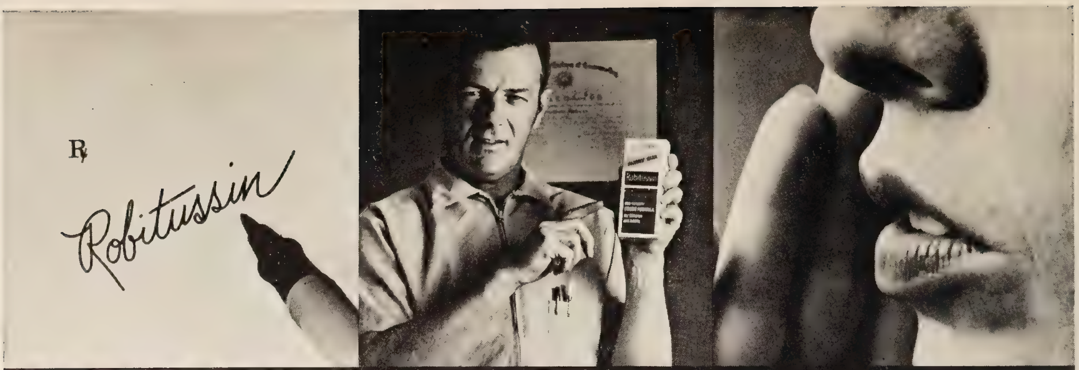
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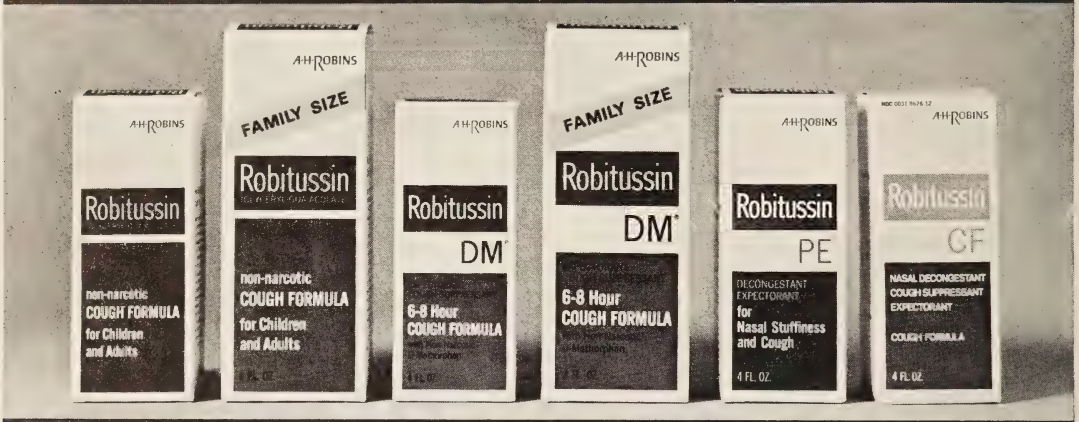
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(Continued from page 16)

macists the providing in pharmacies of information about drugs to the public; and the defeat of many proposals not in the best interest of the public or the profession. The batting average during these years has been very high for pharmacy.

During this period, our honoree, also found time to serve in many capacities for the Baltimore Metropolitan Pharmaceutical Association and was president in 1973.

Since 1972, Paul has been a member of the State of Maryland Formulary Committee and exercising strong leadership to implement the law, we all worked so hard to make a reality.

In 1969 he was appointed an Instructor at the School of Pharmacy and since 1970 has served as a preceptor in the University's Professional Experience Program.

Paul Freiman's interests and activities have brought him recognition in other areas. These include election to the Board of Beth Israel Synagogue, Board of Directors of Calvert Drug Company and as President of the Security Shopping Center Merchants Association.

Now for some personal comments about Paul Freiman. True, he is my "boss" (or more accurately my current chief boss of bosses); but not for long, so I can't be accused of wanting to say only flattering things about him.

I said at the beginning that Paul is a rare human being. So allow me now to elaborate. First, he has successfully compounded a formula of a loving family, career in community pharmacy practice oriented to personal service to his patients, and commitment to the enhancement and advancement of his profession. Paul considers it his responsibility as a pharmacist to be the consumer advocate about pharmacy service and drugs to his patients.

Paul Freiman's total sincerity, total devotion to his patients and total dedication to his profession and its organized representative structure shine through. These qualities are obvious not only to those close to him, but have been equally recognized by state officials, legislators, educators, allied health professionals and national leaders in pharmacy.

Paul and I frequently disagree about professional, legislative and organizational matters but I respect his views and admire his courage—a courage to take sometime unpopular positions far in advance of his colleagues. And last—but so very important—his personal courage in the face of threatening risks to his health. Paul is a man for many, many personal and pharmaceutical seasons.

Fortunately, Paul has another great partner—his devoted wife, Phyllis—and his three children and many close relatives and friends.

We all look forward to many decades of a full life and continued constructive service from this year's Honored Alumnus—Paul Freiman.

calendar MP

October 29 (Wednesday) MPhA Regional and House of Delegates Meeting, Center Adult Learning, University of Md., College Park.

November 16 (Sunday) Alumni Association Oyster Roast, Overlea Hall.

January 16-23—MPhA Seminar and Tour Mexico City-Acapulco.

February 8 (Sunday) BMPA Installation Banquet.

June 20-23—MPhA Annual Convention, Sheraton Fountainebleau, Ocean City, Md.

Three Millionth Substance Registered

The American Chemical Society's Chemical Abstracts Service Division has recorded the 3 millionth unique chemical substance in the files of its computer-based Chemical Registry System. The total includes all unique substances indexed in *Chemical Abstracts* since January 1965, when the Registry first began operating as an adjunct to CAS's indexing operations. Substances new to the files currently are being registered at the rate of about 300,000 per year.

The Registry now functions as an integral part of the indexing operations for *Chemical Abstracts,* handling some 25,000 substance identifications each week. CAS finds that 75% of the substances indexed for current CA volumes are already in the Registry files, and the previously assigned index names for these substances are recovered automatically by feeding into the system either names or structures appearing in the papers or patents being indexed.

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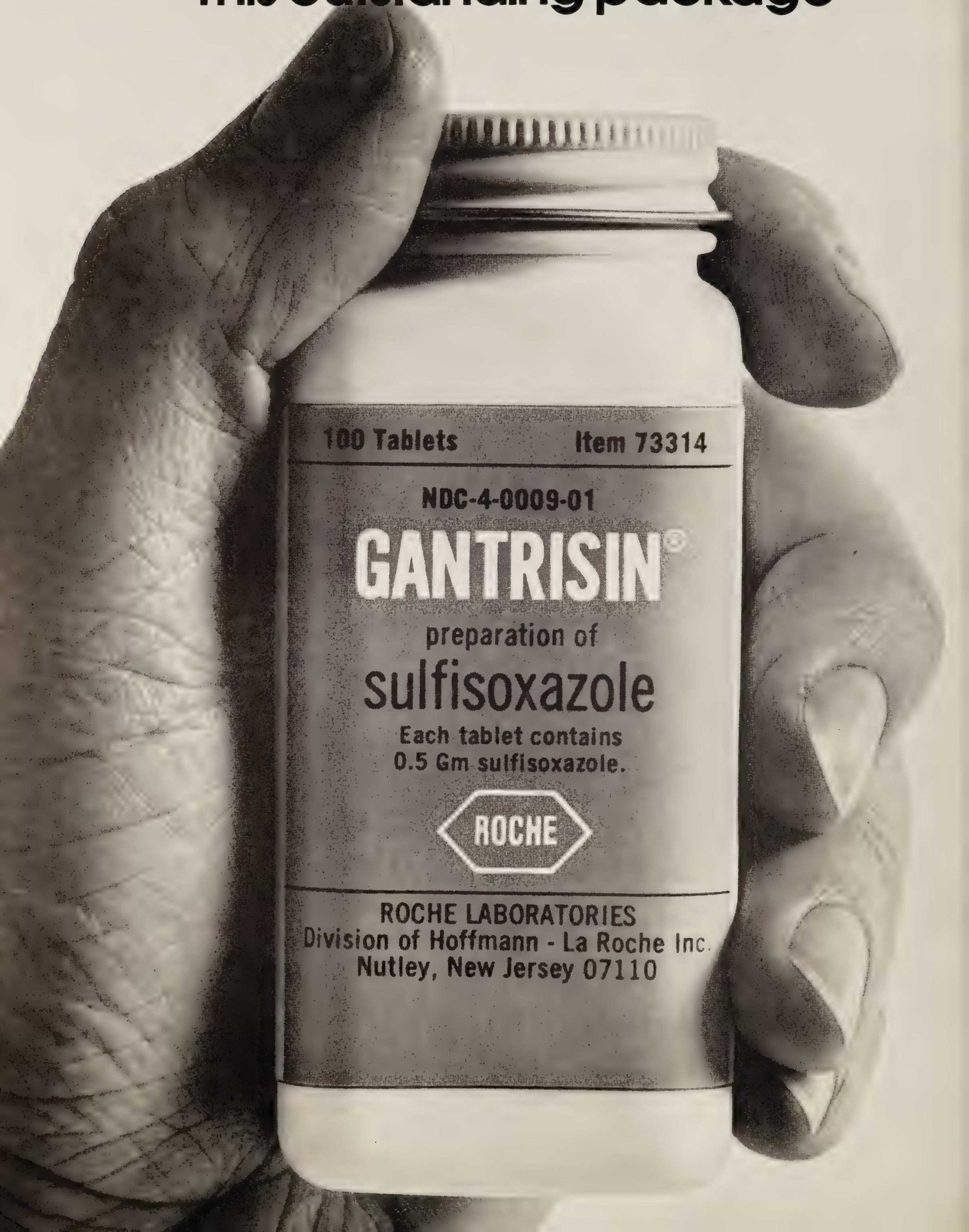
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The New Environment of Pharmacy

To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy*, will keep you continuously informed on a wide range of pertinent subjects—new government regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, New Jersey 07110.

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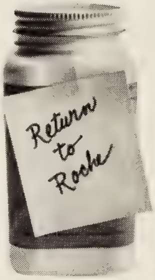

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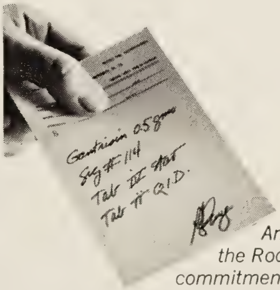

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Indications: Nonobstructed urinary tract infections (mainly cystitis, pyelitis, pyelonephritis) due to susceptible organisms. **IMPORTANT NOTE: *In vitro* sensitivity tests not always reliable; must be coordinated with bacteriological and clinical response. Add aminobenzoic acid to follow-up culture media. Increasing frequency of resistant organisms limits usefulness of antibacterial agents, especially in chronic and recurrent urinary infections.** Maximum safe total sulfonamide blood levels, 20 mg/100 ml; measure levels as variations may occur.

Contraindications: Hypersensitivity to sulfonamides; infants less than 2 months of age; pregnancy at term and during the nursing period.

Warnings: Safety in pregnancy not established. Do not use for group A beta-hemolytic streptococcal infections, as sequelae (rheumatic fever, glomerulonephritis) are not prevented. Deaths reported from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias. Sore throat, fever, pallor, purpura or jaundice may be early indications of serious blood disorders. CBC and urinalysis with careful microscopic examination should be performed frequently.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy or bronchial asthma. Hemolysis, frequently dose-related, may occur in glucose-6-phosphate dehydrogenase-deficient patients. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *Allergic reactions:* Erythema multiforme (Stevens-Johnson syndrome), generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *Gastrointestinal reactions:* Nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; *Miscellaneous reactions:* Drug fever, chills and toxic nephrosis with oliguria and anuria. Periarteritis nodosa and L.E. phenomenon have occurred. Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Supplied: Tablets containing 0.5 Gm sulfisoxazole; pediatric suspension and syrup containing, in each teaspoonful (5 ml), the equivalent of 0.5 Gm sulfisoxazole in the form of acetyl sulfisoxazole.

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PHARMACOKINETICS AND PATIENT CARE

by

JOSEPH ADIR, PH.D.*
Assistant Professor,
Pharmacy and Pharmacology-Toxicology

Abstract

This article reviews some of the basic pharmacokinetic principles as they may be applied to the health care delivery system. Pharmacokinetic techniques are described to adjust dosage regimen in situations commonly encountered in drug therapy, such as the alteration of route and time of administration, dosage forms, renal function, and liver metabolism. The advantages and limitations of these techniques are also discussed.

Ideally, drug therapy aims at eliciting a desired pharmacologic response without toxic manifestation. In reality, however, it may not be completely devoid of toxic reaction. Drug therapy strives accordingly to keep a drug plasma concentration within a therapeutic range bounded above by an unacceptable incidence of toxicity and below by a lack of effect.

The therapeutic effect of the majority of drugs is related or dependent upon exceeding a *minimum concentration* of the drug in plasma. The assumption is that a functional relationship exists between the plasma levels of the drug and its concentration at the target organ where the drug elicits its pharmacologic action. This assumption has been verified in several cases. Examples are the bacteriostatic and chemotherapeutic agents, antituberculars (e.g., isoniazid and rifampicin), cardiac drugs (digoxin, digitoxin, procainamide, etc.), barbiturates, tubocurarine, analgesics, antidepressants, dicoumarol, and theophylline (1-11). In all these situations, knowledge of the pharmacokinetics of the drug can be utilized as a powerful tool in improving the patient-care delivery system.

Pharmacokinetics is defined as the study of the kinetics of absorption, distribution, metabolism, and excretion of drugs and their corresponding pharmacologic, therapeutic, or toxic responses in animals and man (12). The characterization of these processes affords means to (a) quantitate the change of drug levels in the plasma and tissue as a function of time, (b) develop an adequate dosage regimen for multiple-dose administration, (c) predict the effect of certain disease states or dosage forms and rationalize appropriate drug therapy, (d) explain the mechanisms of certain processes and anomalies which are involved in drug therapy, and (e) correlate the time-course of the drug with its pharmacologic action.

Before proceeding with the discussion of some of these implications, a review of the basic pharmacokinetic principles is deemed necessary.

Many of the processes governing the kinetic behavior of a drug molecule in the body can be described by first-order kinetics. This may be the case when characterizing the passage of the drug from the intestinal lumen into the blood stream, its crossing of cell membranes of the different tissues and organs, metabolism of the drug at a concentration below saturation, renal excretion of the drug by glomerular filtration, etc. In all these processes and others in which first-order kinetics are applicable, the change in the amount or concentration of the drug per unit time is proportional to the amount or concentration of the drug at that time. For example, if a drug administered intravenously is eliminated from the body by glomerular filtration, then the rate of decline of the drug concentration in the body (or the rate of excretion into the urine) is proportional to its concentration in the body.

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*Dr. Joseph Adir presently is an Assistant Professor of Pharmacy and Pharmacology-Toxicology and Director of the Clinical Pharmacokinetics Laboratory at the School of Pharmacy, University of Maryland in Baltimore. He received his Master of Pharmacy degree from the School of Pharmacy, Hebrew University, Jerusalem, Israel and his Ph.D. from the Department of Pharmaceutics of the School of Pharmacy, State University of New York at Buffalo. His research activities include the biopharmaceutical and physiological factors affecting the bioavailability of drugs, pharmacokinetics and the correlation between plasma levels and pharmacologic action of drugs. He has published several articles on these subjects and was awarded a number of grants from the National Cancer Institute and the HEW, State of Maryland to investigate some of these topics. In addition, Dr. Adir teaches biopharmaceutics and pharmacokinetics to undergraduate and graduate pharmacy students and is participating in the continuing education program of the School of Pharmacy. He is a member of MPhA.

Mathematically, the process is described by the following equation:

$$\frac{dC}{dt} = K\,C$$

where C is the concentration at time t, and K represents the rate constant for renal excretion of the drug from the body. The solution of this differential equation is:

$$C = C^0\ e^{-Kt}$$

where C^0 is the initial concentration of the drug immediately after dose administration. Further derivation of this equation produces the following important relationship:

$$t\tfrac{1}{2} = \frac{0.693}{K}$$

where t½ represents the half-life of elimination of the drug, defined as the time needed to reduce a certain concentration to its half value.

In this particular example, the assumption is made that the drug is instantaneously distributed throughout the tissues and organs such that the plasma levels *reflect* the concentration of the drug in these tissues and organs, and the body can be treated as a single compartment. In pharmacokinetic terminology, the drug is said to follow a one-compartment-open-model. However, this model may not always be applicable, and multi-compartment models are often indicated. Also, zero-order kinetics may prevail, resulting in more intricate treatment, which is beyond the scope of this article. The pharmacokinetic analysis and implications discussed below will therefore deal only with the one-compartment-open-model case.

Since most drugs are administered on a multiple dosage regimen, it is important to characterize the steady state plasma concentration of the drug in this situation. Wagner derived the following equation describing the average plasma concentration of the drug after chronic administration (13):

$$\bar{C}_{(\infty)} = \frac{F.\,D.}{K.\,V.\,\tau} = \frac{1.44\ t\tfrac{1}{2}\ F.\,D.}{V.\,\tau} \qquad (1)$$

The equation provides a very important tool for the successful utilization of pharmacokinetics in patient care. It indicates that the average plasma concentration after multiple drug administration is directly proportional to the fraction of the dose reaching the systemic circulation (F)* the dose (D), and the half-life of the drug (t½) and inversely related to the apparent volume of distribution (V) and dosing interval (τ). Thus, knowledge of the pharmacokinetic parameters F, t½, and V from a single dose study allows the calculation of D or τ, which will produce a steady state plasma concentration within the therapeutic range of the drug. Likewise, if a particular dose is given at a predetermined dosage interval, the average plasma concentration of the drug achieved at steady state can be predicted and, therefore, possible toxic manifestation can be averted. It should be noted that a carefully assessed balance between D and τ would eliminate the occurrence of a large difference between maximum and minimum plasma levels.

After achieving a desired steady state average plasma concentration under a well-defined set of the patient's physiological and pathological conditions, it may be necessary to modify the drug dosage regimen if these conditions are altered. Some of these situations along with suggested remedies are discussed below.

Route of administration: Drug therapy is switched from one route of administration to another having a different F value. Such is the case when an i.v. administration (F = 1.0) is replaced by an oral therapy in which F is known to be less than unity because of poor absorption of the latter form or because of the metabolic degradation of the drug in gastro-intestinal lumen, gut walls, or during the "first pass" through the hepatoportal system. Propranolol, propoxyphene, aspirin, salicylamide, lidocaine, pentazocine, and nortriptyline are cases in example (16-22). Conversely, if an oral therapy has to be stopped because of gastric disorder, inability to swallow, etc., and intravenous medication initiated, a reduction in D may be indicated.

Assuming the other parameters in eq. (1) remain unchanged, and F is obtained from the literature, the corrected dose can be obtained by solving the equation for D.

Dosage form: Therapy is shifted from one brand of medication to another. This situation often arises from economic or manufacturing considerations as well as market availability. If a difference in response is suspected or observed, altered bioavailability (F) may account for this change, and a new dosage regimen may be calculated according to eq. (1). An excellent example is the two-fold increase in peak and plateau digoxin levels observed in patients given a new preparation of the drug (23). In this case, 30% of the new plateau levels were above the accepted upper therapeutic levels, and one patient showed clinical signs of toxicity which disappeared on halving the dose (23). Similarly, a number of patients in Australia exhibited signs of diphenylhydantoin (Dilantin) overdose after being treated with a formula in which lactose, used as exceptient, was substituted for calcium sulfate (24, 25). The clinical implications of products of varying bioavailability have been recently discussed (26). In these cases, knowledge of F affords the calculation of the dosage regimen required to produce the same average drug plasma concentration by means of eq. (1).

Time of Administration: In a recent study, Adir and Barr found that the fraction of tetracycline HCl (TC)

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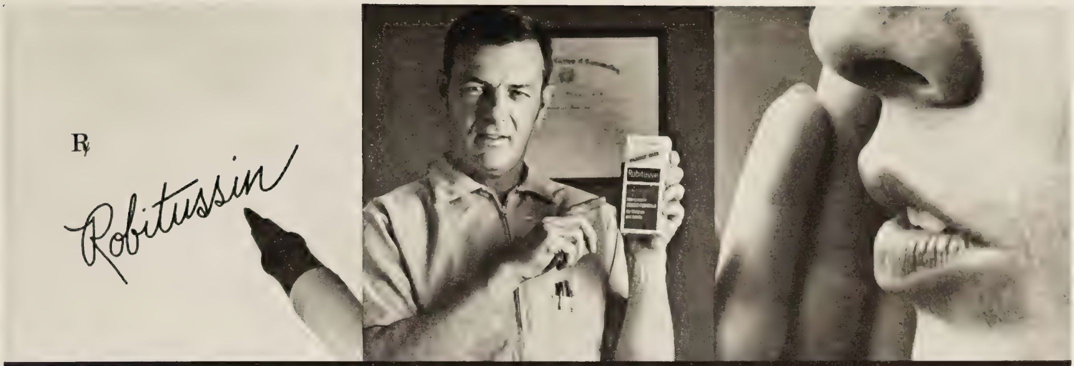
*Though drugs may be partly or completely absorbed, some undergo metabolism in the gut wall or the hepato-portal system (14). The many factors affecting the gastrointestinal absorption of drugs have been reviewed elsewhere (15).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reaching the systemic circulation (F) was decreased by almost 40% when a 250 mg capsule of the drug was given to bedridden volunteers at 4:00 a.m. as compared to the administration at 8:00 a.m. to the same subjects in an ambulatory state (27). The need to counteract such reduction in bioavailability may be appreciated when considering the pharmacologic action of this drug. TC is a bacteriostatic agent which exerts its effect by binding reversibly with specific enzymes in the microorganism (28); hence, 250 mg TC is usually given every 6 hours. As long as a certain minimum level of the drug is present, the growth of the microorganism is inhibited; however, once the level of the drug has fallen off, growth of the microorganism is rapidly resumed. In addition, a fall in TC blood level may be obtained if one or more doses of the drug is skipped because of patient lack of compliance (29).

By applying eq. (1), an increase in the nightly administered dose to 315 mg would be necessary in order to sustain the same average plasma level. However, since this solution is impractical, the recommendation is made to administer the subsequent dose after 4.8 hours instead of 6 hours (27).

Interaction with other drugs: Equation (1) can be successfully applied to adjust D or τ in cases of unavoidable interaction of the drug with gastrointestinal constituents or concomitant administrations of other drugs that produce an impairment in bioavailability. Examples are the interaction of TC with antacids (30), digoxin with propantheline and metoclopramide (31), lincomycin with kaopectate (32), etc. Knowledge of the extent of interaction provides a judicious adjustment of the dosage regimen.

Renal function impairment: This is probably the most common and most important situation in which dosage adjustment is necessary. The half-life of many drugs that are eliminated from the body predominantly by glomerular filtration has been shown to increase severalfold in oliguric patients. For example, the half-life of gentamicin in patients with normal renal function is two hours, whereas it reaches 67 hours in patients with kidney failure (33). Tetracycline has a t½ of 57 to 108 hours in patients with renal disorders compared to 8.5 hours in normal patients (34). Likewise, the t½ of digoxin increases by almost threefold in anuric subjects (35).

One approach to modify dosage regimens in patients with impaired renal function involves the utilization of equation (1). The assumptions are made that the same average steady state plasma concentration of the drug, $C\,(\infty)$, is to be maintained, the fraction of dose reaching the systemic circulation, F, is to remain the same for normal and uremic patients, and also, the apparent volume of distribution, V, is essentially constant.* Under these conditions, *either* D *or* τ are modified in patients with renal disorders according to the following equations:

$$Dr = Dn\,\frac{Kr}{Kn} = Dn\,\frac{(t\frac{1}{2})\,n}{(t\frac{1}{2})\,r} \qquad (2)$$

and

$$\tau r = \tau n\,\frac{Kn}{Kr} = \tau n\,\frac{(t\frac{1}{2})\,r}{(t\frac{1}{2})\,n} \qquad (3)$$

where the subscripts n and r designate the normal or impaired renal function patient, respectively.

It is quite clear from the above equations that $Kr < Kn$ and $(t\frac{1}{2})\,r > (t\frac{1}{2})\,n$, due to the impaired elimination of the drug. The dose given to a patient with renal failure will be reduced proportionately to the degree of impairment of his kidney function, or the dosage interval is proportionately increased. The latter approach is to be avoided in drugs requiring a minimum effective concentration to elicit their pharmacologic response because the resulting plasma level may be below this concentration.

To calculate the corrected dose, the foregoing pharmacokinetic treatment requires knowledge of the overall rate constant of elimination of the drug in the individual patient. This information may not be easily attained in small hospitals or community practices. Fortunately, the overall rate constant for the elimination of many drugs is directly related to the glomerular filtration rate as measured by creatinine clearance and, with some cautions, the serum creatinine levels (37, 38). Thus, knowledge of the degree of the patient's renal impairment compared to normal values of these tests may be substituted for the ratio of $\frac{Kr}{Kn}$ in equations (2) or (3) to calculate the corrected dose or dosage regimen for the uremic patient.

It should be noted that this approach is generally valid for drugs that are eliminated *mainly* by glomerular filtration; however, there are cases in which this approach may not be valid even for drugs of this type. For example, Wagner and co-workers recently reported that among other readily obtainable parameters, creatinine clearance or serum creatinine level did not accurately predict the steady state plasma digoxin concentration (39). The authors concluded that in patients undergoing digoxin therapy, serial measurements of plasma digoxin levels are necessary (39).

For drugs which are eliminated by glomerular filtration *and* metabolism, the corrected dosage regimen in the impaired renal function patient involves the utilization of eq. (2) or (3). However, calculation of the ratio $\frac{Kr}{Kn}$ requires knowledge of the fraction of dose ultimately excreted unchanged in the urine of patients with normal renal function. Denoting this fraction by f, the following relationship may be utilized (40):

$$\frac{Kr}{Kn} = 1 - f\,(1 - R) \qquad (4)$$

$$\text{where } R = \frac{\text{creatinine clearance in impaired renal function patient}}{\text{creatinine clearance in normal renal function patient}}$$

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*In some cases, these assumptions may not be valid (36).

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Ordinarily, f is easily retrievable from the literature, and R can be obtained by normal laboratory tests. It should be mentioned that in addition to the assumptions underlying the derivation of eq. (2) and (3), the assumption is made that no compensatory extra-renal mechanisms have taken over in the patient with impaired renal function. This assumption may not be valid in some drugs. For example, methicillin, oxacillin, erythromycin, and chloramphenicol can be given to uremic patients without dosage modification, whereas penicillin G, cephalothin, cephaloridine, and ampicillin require minor changes in dosage (41). This is probably due to the speculated increased hepatic elimination of these agents when oliguria or reduced renal function exists. Letteri *et al.* found that t½ for the elimination of diphenylhydantoin averaged 8.1 hours in five uremic patients and 13.0 hours in non-uremic subjects, suggesting that altered metabolic disposition of the drug occurs in uremia (42).

Liver diseases: The disappearance of many drugs eliminated mainly by metabolism has been shown to be affected by liver diseases. For example, the half-life of elimination of tolbutamide in 5 out of 10 cirrhotic patients was found to be 7.8 to 11.2 hours compared to an average of 4.4 hours in patients with normal liver function (43). Also, the elimination of chloramphenicol, phenylbutazone, meprobamate, amobarbital, acetaminophen, lidocaine and prednisolone was decreased in liver diseased patients (44-50). The toxicity of diethylstilbesterol was about 140 times greater in rats with altered hepatic function produced by bile-duct ligation, injection of carbon tetrachloride, or surgical removal of two-thirds of the liver (51). This increase in toxicity was accompanied by a decrease in the plasma disappearance of the drug (51).

Liver diseases are likely to produce qualitative and quantitative changes in plasma proteins. These changes, in turn, may affect the pharmacokinetics and, subsequently, the pharmacologic action of drugs. For example, an association was formed between low serum albumin levels and adverse effects of prednisone in 240 patients (52). Protein binding of amylobarbitone was reduced in patients with abnormally low concentrations of albumin in serum, and the half-life of disappearance of the drug was increased by better than two-fold (47).

Adjustment of dosage regimens of drugs affected by liver disease is, therefore, necessary. The treatment outlined in renal function impairment may be used for this purpose. Unfortunately, relationships between liver function tests and half-life of elimination have not been extensively studied.

Conclusion

The tremendous strides accomplished recently in the pharmaceutical and medical sciences have borne very potent drugs for the treatment of diseases considered incurable for decades. Inevitably, the increased potency of several newly developed drugs is coupled with low toxicity thresholds. All of these factors precipitate a growing responsibility on the part of health care delivery personnel to achieve therapy while minimizing adverse side effects. To meet this challenge, new and sophisticated resources must be utilized.

The role of pharmacokinetics in patient care has been discussed. By applying simple equations derived from mathematical models, it is possible to adjust the patient dosage regimen in many cases. Corrected dose or dosage intervals may be indicated when switching from one route of administration to another, shifting to a new brand or dosage form, administering nightly dosages, and treating impaired renal function patients and liver disease patients. Generally, normal laboratory tests and often review of literature can be utilized to achieve the desired dosage regimen.

Admittedly, caution must be exercised in applying these relatively simple techniques. This is particularly true for cases in which routine laboratory tests have been found to be ineffectual in adjusting drug dosage regimens. To individualize dosage regimen in these situations, complete pharmacokinetic analyses must be undertaken.

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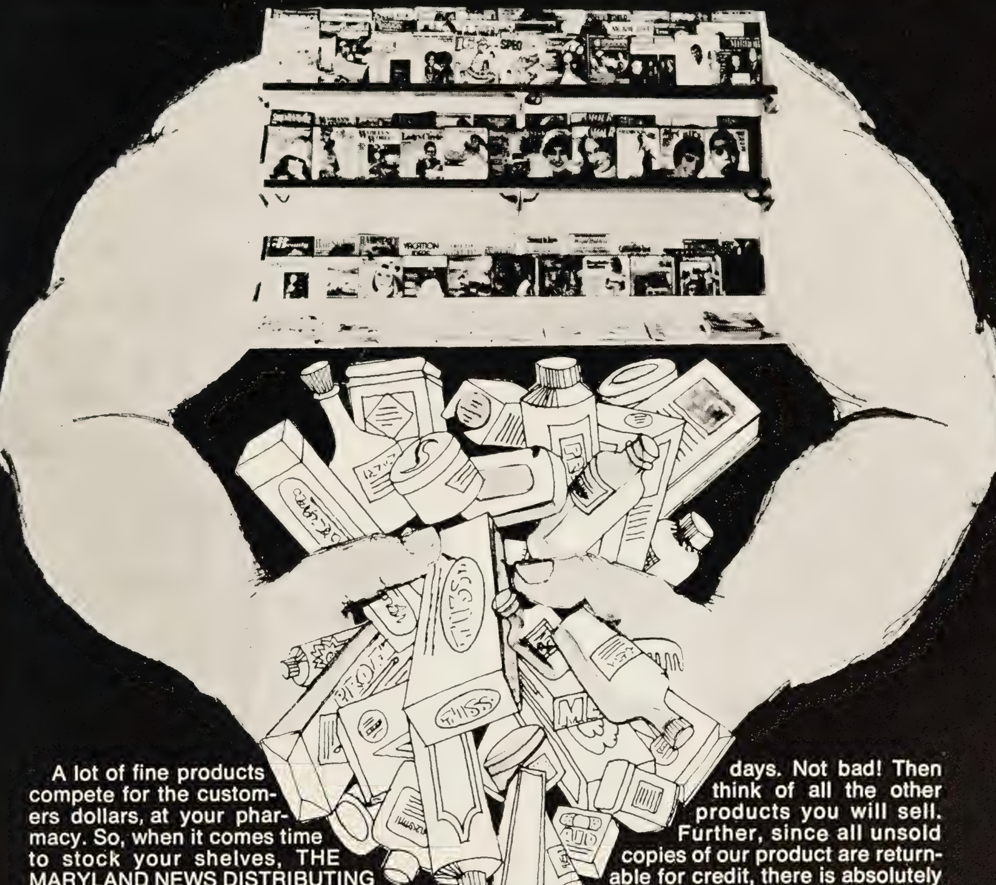

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Changes of Ownership, Address, Etc.

Kent Pharmacy, James L. Gundling, (Change of ownership—L. W. Lohmeyer); 390 W. Main Street, Crisfield, Maryland 21817.

Sentry Drug Center #2, James E. Allen, President, (Change of ownership—Samuel Lang, President); 1818 Virginia Avenue, Hagerstown, Maryland 21740.

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None.

A Preview of Community Pharmacy, 1974

A preliminary *Lilly Digest* report of 1,028 community pharmacy operations shows that 1974, a year filled with double-digit inflation and recessive business activity, was marked by a rising cost of goods and only a slight dollar gain in profit. When the individual income and expense statement items are expressed as *percentages of total sales* and compared with 1973 *Lilly Digest* data, they indicate that . . .

> The cost of goods sold increased during the year, and even though total expenses dropped slightly, the net result was that profit fell to the all-time low recorded in 1972, 3.6 percent of sales, before taxes.
>
> Total sales reached a record high of $274,083, an increase of $14,961 (5.8 percent) over 1973 sales. This was slightly higher than the average annual growth rate of 5.4 percent over the past decade. The sales increase was due to a 7.2 percent growth in prescription revenue and a 4.5 percent rise in other sales. During 1974, prescription sales as a *percentage of total sales* climbed to 48 percent (up from 47.3 percent in 1973). The greater growth in prescription revenue, in contrast to nonprescription sales, further illustrates the importance of the prescription department to the average community pharmacy.

Due to the increase in cost of goods sold (larger percentagewise than the growth in total sales), the gross margin fell to 35.8 percent of sales, the lowest point recorded since 1968. The increase in cost of goods sold was the major contributing factor to the fall in profit percentage.

Total operating expenses increased by $4,394 (5.2 percent), but as a *percentage of sales,* they dropped slightly, to 32.2 percent. Although employees' wages increased dollarwise, this expense declined to 11.6 percent of sales in 1974, the lowest level recorded since 1967. The average proprietor's salary increased by $1,231 (5.8 percent) in 1974, but total income (salary plus net profit, before taxes) fell to 11.7 percent from 11.9 percent in 1973.

The inventory level rose in total dollars but decreased slightly as a percent of sales. The sales productivity of the prescription department inventory reached an all-time high of $8.33 per stock dollar, whereas other merchandise produce $4.67 per dollar invested in inventory, about the same as the $4.66 return in 1973.

The number of prescriptions dispensed during the year went up to 27,561, an increase of 542 prescriptions. This 2 percent growth in total prescriptions dispensed was substantially lower than the 5 percent figure recorded from 1972 to 1973. However, a significant change occurred in 1974 concerning new prescriptions as a percentage of the total number dispensed. This was 46.4 percent, up from 45.5 percent in 1973, and is the highest figure reported since 1966. The average prescription charge went up twenty-three cents during 1974, from $4.54 to $4.77—up 5.1 percent:

Summary

The preliminary *Lilly Digest* report of the 1974 operating figures of 1,028 community pharmacies is compared with the 1973 *Lilly Digest* averages of 1,805 pharmacies and is summarized in the following table. The annual *Lilly Digest* will be completed and distributed in September, 1975.

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Nathan I. Gruz, Editor
Maryland Pharmacist
650 West Lombard Street
Baltimore, Maryland 21201

LAMPA

Ladies Auxiliary
Maryland Pharmaceutical Association

FALL REGIONAL MEETING

Wednesday, October 29, 1975

Center Adult Learning
University of Maryland
College Park, Maryland

Schedule of Activities

8:00 a.m. First Pick Up — Towson Plaza Shopping Center — northeast corner of lot near Hampton House, back of Davidson Transfer.

8:30 a.m. Second Pick Up — Reisterstown Road Plaza Shopping Center — northwest corner across Brookhill Road from Exxon Station.

9:45 a.m. Conducted tour of the new FBI Building in Washington.

11:30 a.m. Bus leaves for College Park, Center for Adult Learning.

12:00 noon Lunch with members of MPhA at the Adult Learning Center — Cost of lunch, $5.00.

1:15 p.m. Short LAMPA business meeting.

2:00 p.m. MEMORY DYNAMICS — presented by Mrs. Annette Padussis Kassolis. If you have trouble remembering, you will appreciate this lecture on how you can improve your ability to remember.

3:15 p.m. Bus leaves for Baltimore.

Time permitting, we may be able to explore some of the buildings on the huge campus of our State University.

The bus will be FREE to dues paid LAMPA members. A charge of $3.00 will be made for guests.

All members interested in going on the 29th, call or mail their reservations *immediately* to:
Mrs. Richard R. (Ann) Crane
6007 Eurith Avenue, Baltimore, Md. 21206
Telephone: 485-7474

Much time and expense is involved in planning our programs and they cannot succeed without you. Please let us hear from you.

If reservations do not warrant, we may have to cancel the bus and the FBI tour.

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obituaries

William Weltner, 83, Longtime Pharmacist

William Weltner, a longtime pharmacist, of 4401 Roland avenue, Baltimore, died at Maryland General Hospital earlier this month.

For the past eight years, he had been working at the Morgan and Millard Pharmacy in Roland Park.

For about 50 years before that, he had owned his own business at North avenue and Pulaski street.

A native of Baltimore, he was a graduate of the University of Maryland School of Pharmacy.

A member of the Concordia Lodge of the Masons for more than 60 years, he was also a member of the Wedgewood club, a pharmacists group.

He is survived by his wife, the former Annie Brown; a son, William Weltner, Jr., of Gainesville, Fla.; a daughter, Mrs. Joseph Brumback, Jr., of Baltimore; a sister, Mrs. Charles Bachman, of Baltimore, and five grandchildren.

HYPERTENSION

An estimated 23 million Americans—one in every seven adults— have high blood pressure. Approximately half of these individuals are not aware they have the disease, and only 25 percent are receiving medical treatment. About 12 percent of all high blood pressure victims are considered under adequate treatment. Sixty thousand Americans die each year as a direct result of the disease, which also plays a significant role in more than a million and a half heart attacks and strokes Americans suffer annually.

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The Maryland Pharmacist

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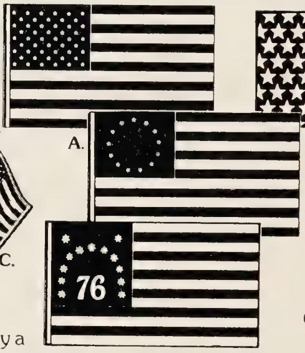
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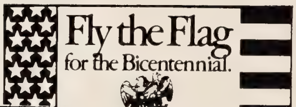

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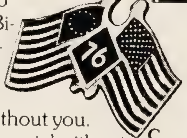
C.

Just how do you celebrate a Bicentennial? You've had lots of practice celebrating Christmas, New Year and Thanksgiving. But there has never been a Bicentennial...and there will never be another. Just as regular holidays depend on people to celebrate them, so does the Bicentennial. And all the Bicentennial commissions and administrations combined can't celebrate it for you or without you. Trying to celebrate the Bicentennial without a flag is like Christmas without a tree. Our flag is the one emblem that has stood for our country for the past 200 years. So start now. Fly a flag on your house, on your lapel, and on your car window and bumper. If you have a flag, fly it proudly. If you don't, use this convenient order form. Our publication has been authorized by the U. S. Bicentennial Society to make these hard to find, high-quality flag materials available at prices lower than you would expect to pay (made possible by the large quantity involved with this national program). Order now. Start celebrating our one and only Bicentennial today!

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THE MARYLAND PHARMACIST

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JULY 1975
VOL 51
NO 7

The Destructive Critics—Editorial

Propranolol: A Review Of Its Anti-Hypertensive Effects

President's Address
93rd Annual Convention MPhA

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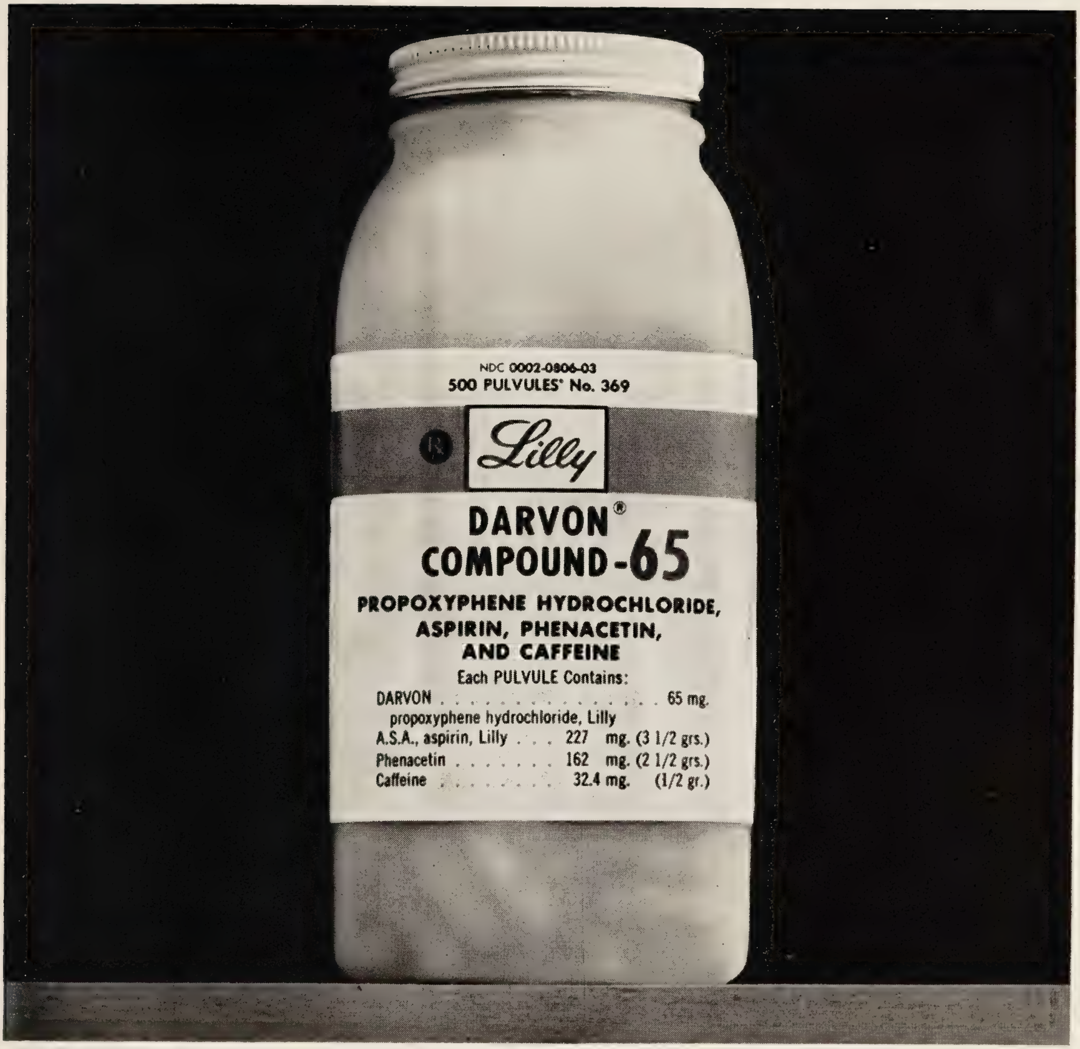
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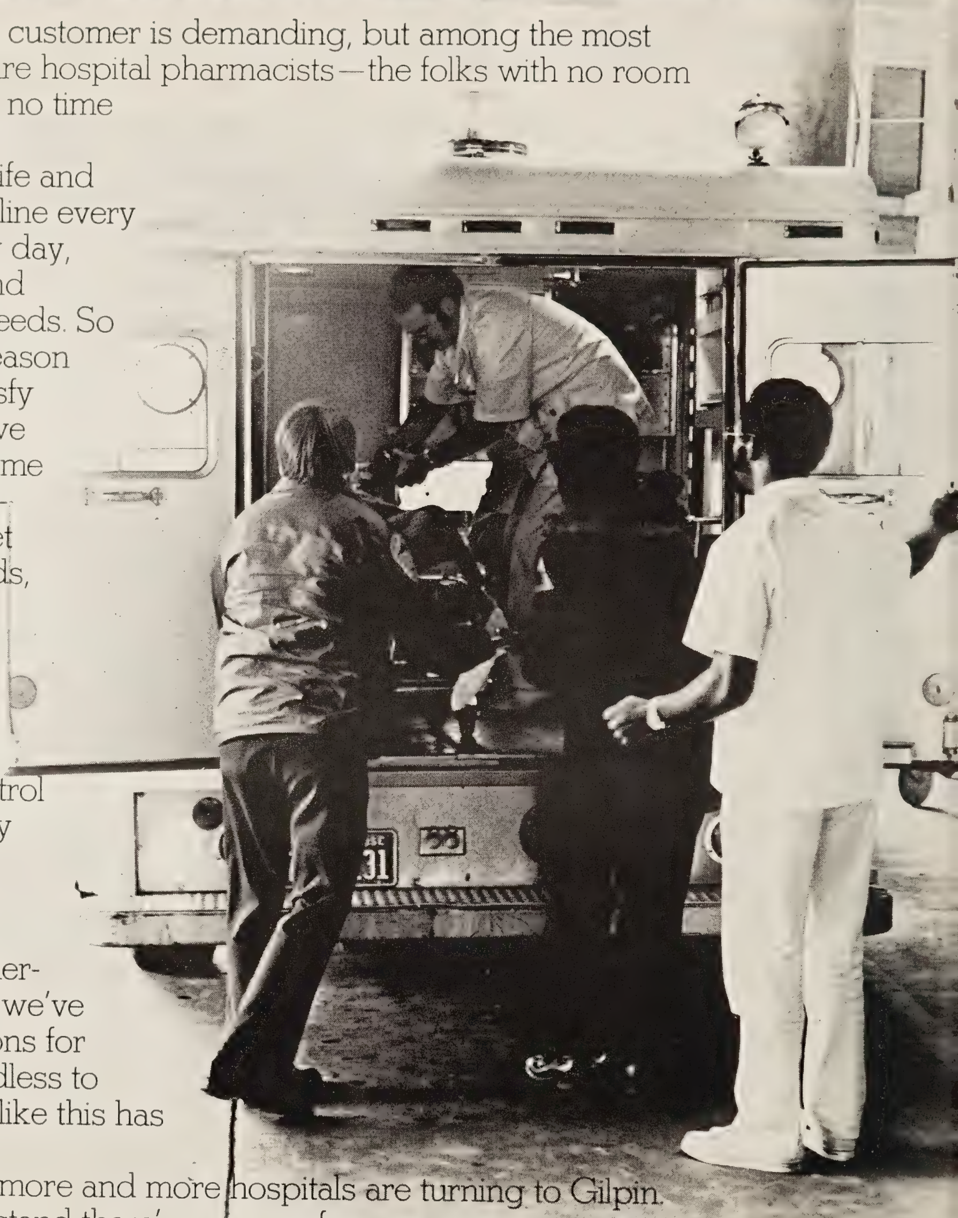

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editorial

Holier Than Thou Pharmacists— The Destructive Critics

The way pharmacy will be practiced tomorrow, next year and in the future—five, ten, twenty years from now—will be determined by many factors. The critical factors can be divided into two major classes—external and internal—which interact with each other.

First, we must face the external factors, such as the attitudes of opinion and decision makers outside of pharmacy. These include among others legislators, government officials, administrators of health care organizations, community leaders, the media, organized labor, educators and other health care professionals.

Second, internally, is the role of pharmacists and organized pharmacy representing the profession. How well is the profession organized at the local, state, and nation levels? How broad and how deep is the support by pharmacists? Are narrow parochial interests permitted to weaken the efforts to achieve legitimate professional and economic interests?

Only when action by pharmacists individually and by specialty groups (such as state chapters or societies of consultant pharmacists or hospital pharmacists) reinforce the strength of the state pharmaceutical association will recognition for the profession of pharmacy and an understanding of it as an integral, essential part of comprehensive health care be achieved.

In addition, members of the faculty of colleges of pharmacy can go a long way in advancing the aspirations of the profession by personal participation in MPhA, by contribution of their special expertise to MPhA and by leadership in encouraging practitioners to face their public and professional responsibilities through MPhA membership.

The Maryland Pharmaceutical Association has a record of recognizing the vital importance of pharmacists in whatever area of practice they are engaged—community, hospital, nursing home, teaching, government or other. Pharmacists from all these areas have been elected as officers and trustees; served as chairmen, as members of committees and as MPhA delegates to APhA; and have been recommended and appointed to governmental bodies such as the Board of Pharmacy.

The positive legislation in the area of pharmacy that is on the law books has resulted largely from the work of MPhA. Every year, a great deal of legislation that is detrimental to the professional and economic interests of pharmacy is defeated. Our "score" with the state government and the legislature is high.

The time is long past when "summer soldiers" who stand outside of MPhA should be accorded recognition and status as "leaders." Let them exercise responsible professional citizenship by voluntarily joining the state professional pharmaceutical society and thus achieve a full opportunity to contribute to the advancement of their profession and thereby earn the right of constructive criticism.

— Nathan I. Gruz

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In Our Own Best Interests: Activity and Response 1974-75

Address By Paul Freiman
President, Maryland Pharmaceutical Association

93rd Annual Convention
Baltimore Hilton Inn — Pikesville
June 26, 1975

In my first presidential report given at the regional meeting in November 1974, I made the following promise to this body. "This presidency will be marked with activity and response to all factors affecting our profession and our members, and if we fail or do not achieve our goals, it will not be because the attempt has not been made." I hope that I have lived up to that promise. We have attempted to meet challenge with challenge, to meet crises directly, and through direct and indirect action to try and solve the many problems affecting our profession. Recently a pharmacist said to me, "We seem to have many battles, but no victories." I believe we have a few victories, but hopefully more will come in the future. I would hope that these battles if not leading to victory, at least have served to gain for our association and for pharmacy an increased recognition by both the public and our peers. We will continue to fight for what we think is in the best interest of pharmacy, and more important in the best interest of the patient.

PAUL FREIMAN

There are certain areas in which I believe we have made significant progress. We have been accepted as the spokesman for pharmacy by the State Department of Health, and our many meetings with the department have led not only to increased fees, but to a better understanding of our position. Other third party providers have been put on notice, that we will not accept, unchallenged, any prescription program that does not allow freedom of choice for the patient. The recent emergency meeting on June 12, perhaps demonstrated our unity when it comes to this paramount issue in pharmacy.

In the area of consumerism, we have made significant progress with the consumer advocates in demonstrating the need for complete pharmaceutical service, in which price is only one important factor. We must learn to accept the need of the public to know, and at the same time demonstrate the need of the public to understand our profession. It is for this reason that we supported a compromise kind of price posting this year, and saw it become law. We must respond in a realistic, appropriate way to the needs of the public whether we are in complete agreement or not. We have seen the tragedy when change is forced on us from the outside, and we must both in the future and the present see that change comes from within the profession, even if we must at times swallow our own bitter pills. Perhaps we will achieve greater believability by accepting such things as posting and advertising, in the honest belief that once out in the open they will not remain a constant problem, and will allow us to move on to the more important issues of better patient care for all.

Peer review, after initial stumbling, has come a long way towards achieving effectiveness. For the first time under the leadership of Irv Kamenetz, we have seen prompt and immediate response to patient complaints. Through the Joint Peer Review Committee, we hope to see even greater activity of this important committee in the future.

Another area of achievement has been in the increased communication between the leadership and our members. Through the efforts of Mel Rubin, we have seen the bulletin emerge from a mimeographed sheet to a sophisticated information vehicle for our members. No longer can any MPhA member ask what is the Association doing for him, for he has only to read the bulletin to know.

This year has also seen the rebirth of the Swain Seminar as an active educational function of our Association. Although personally disappointed in not getting a compulsory continuing education bill enacted this year, I have appointed Dr. Ralph Shangraw to study this most important problem. Even though the MSHP could not agree with the wording of the bill, I think that we all agreed on the need for this legislation, if not now, in the near future. Even though we disagreed with the MSHP on this particular bill, I do feel that significant progress has been made in bringing our two organizations closer together, so that we can achieve a united voice for pharmacy. The appointment of a hospital pharmacist to the State Board and election of a hospital pharmacist to the Board of the MPhA will lead to even greater cooperation in the future, for the betterment of our profession.

Another committee that was formed this year has led to an increase in our pharmaceutical knowledge. The Drug Evaluation Committee under Dr. Tom Sisca has published the first evaluation in the March issue of the *Maryland Pharmacist* on Ibuprofen. Hopefully, this report will allow the pharmacist to make a judgement based on unbiased reporting and discuss these findings with the physician. In the future I have asked Tom to change the function of this committee and to evaluate those over-the-counter drugs that should have a warning that cautions the patient to seek pharmaceutical advice before using. With more and more Rx drugs being released for over-the-counter use it is more important than ever, that the public be warned by his pharmacist of the dangers of the use and misuse of OTCs.

I have discussed many areas in which I feel that we have made significant progress, but there are other areas where more work must be done. I speak specifically about employee relations and increased membership. I believe that we can achieve more employee interest and activity in the MPhA by working closely with the Guild. This organization represents a large percentage of employee pharmacists in our state, and I believe that they are as interested in the profession as we are. I would invite their increased input and activity within the Association, so that all facets of pharmacy can work together for greater professional recognition both by the public and the employer. Too often the employee pharmacist has felt like a second class citizen in this Association, and it is time that we make a special effort to remedy this situation.

In the area of membership we must continually point out to the practitioner, especially the independent community pharmacist, that his future depends on the success of this association. His failure to support us can lead not only to the failure to achieve gains, but to the ultimate destruction of our profession. All pharmacists must realize that whether they support us or not, we are the only recognized representative that they have in Maryland, and for better or worse that is a fact that we will not relinquish willingly. If we are not receiving the support of many pharmacists for whatever reason then those pharmacists have no right to protest what we do in the best interest of our profession. We don't ask that every pharmacist become active, but we do believe that every pharmacist owes it to himself and his profession to support us in our efforts.

I believe that I have covered most aspects of this year. The future looms ahead as bigger challenge for pharmacy than the past. We are aware that a legislator is interested in legislation to place a chain pharmacist on the Board. I think we must meet this challenge of attempting to fragment our profession rather than strengthen our efforts for one unified profession. We must review the Board's make-up before the next session of the Legislature, and come up with some suggestions of our own. I personally would suggest that we seriously consider a consumer member for the Board. By bringing the public closer within our deliberations, by allowing concerned lay people to observe what we do, perhaps then we will be more readily accepted by the public for what we are—a concerned profession struggling to provide for the patient the type of pharmaceutical service to which all are entitled. Our hope is that more pharmacists in the future will be able to provide the type of service that will assure our acceptance as a profession.

In conclusion, I would like to say it has been a most memorable year. I must thank the many people who have assisted me, Mel Rubin, Irv Kamenetz, Ronnie Lubman, and others too numerous to mention. My special thanks must go to Nathan Gruz who responded well to the many times I called on the office for his assistance. Whatever success we have achieved must be shared together. .

I stand now before you bloodied, but unbowed. I am sure of the future of our profession and look hopefully toward that future. Whatever success I have achieved I must share with others; for whatever failures that have occurred, I will accept full responsibility. I only hope that I will be judged for what I have tried to accomplish for the present and for the future of pharmacy.

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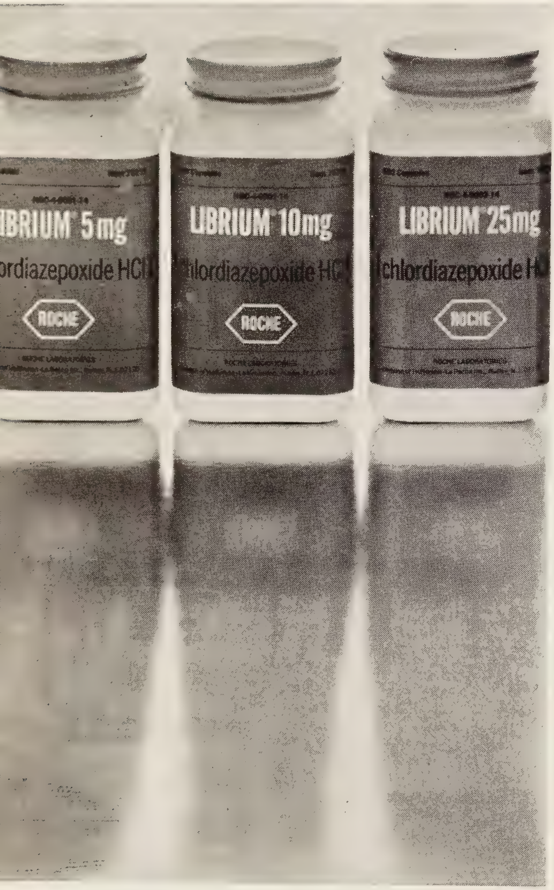

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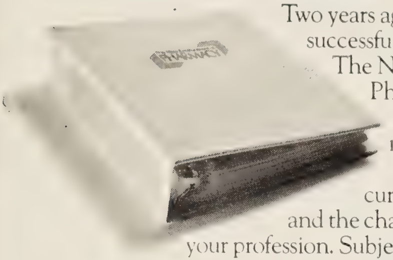

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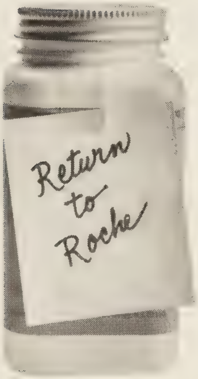

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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May 5

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PROPRANOLOL: A REVIEW OF ITS ANTIHYPERTENSIVE EFFECTS

by

N. CAROLYN LOVE, M.S.*

In recent years the United States has become increasingly concerned about the detection and treatment of hypertension. This concern is the result of an awareness that this disease is quite prevalent in our society and that, if untreated, hypertension may shorten life expectancy by at least 20 years.

Epidemiologists have established that hypertension will afflict at least one of every 10 people in the U.S. (1). Another way of expressing this is that somewhere between 20 and 25 million people in the U.S. will have hypertension—namely, 10 to 12 percent of the total population (2).

The term hypertension refers to elevations of arterial blood pressure which is determined by the diastolic and the systolic pressure. The diastolic pressure is taken when the heart is at rest, whereas the systolic pressure is taken when the heart is contracted. The difference between these two pressures, the pulse pressure, results from the contraction of the ventricles. This pulse pressure is, therefore, partially the result of the size and strength of the heart's ventricles.

There is some disagreement over the definition of hypertension. The two most widely used definitions are based on elevations in the diastolic pressure since systolic hypertension in the presence of a normal or reduced diastolic pressure is rarely responsible for organ damage (4). The World Health Organization (WHO) uses the criterion of a diastolic pressure of greater than or equal to 95mm. Hg, whereas many physicians consider a diastolic pressure of greater than or equal to 90mm. Hg as the upper limit of normal (2,3). These definitions obviously, then, are only guidelines since blood pressure depends on numerous factors which include the patient's age, sex, and underlying illnesses. Blood pressure rises with age. The adolescent with a diastolic pressure of 110 mm. Hg is in greater danger from hypertension than is a 65-year old woman with a similar diastolic pressure. A female has lower "normal" diastolic pressure than has her male counterpart of the same age. Thus, an elevation in diastolic blood pressure in a female may be a "normal" value for her male counterpart. Likewise, a patient with renovascular hypertension, when stabilized, may have a higher "normal" blood pressure than a patient without the renal involvement. Hypertension may broadly be divided into two forms, primary or essential hypertension, where the cause is unknown, and secondary hypertension where there is some associated lesion such as chronic nephritis or a tumor of the adrenal cortex which presumably is responsible for the hypertension (4).

Essential hypertension constitutes about 90 percent of all cases of hypertension. This type of hypertension is further subdivided into benign and malignant forms of hypertension. The benign form is characterized by a gradual onset and a history of the illness over many years. The malignant form is much less common and is frequently of abrupt onset. It often leads to death in a matter of months instead of years. Often, but not always, the malignant form of hypertension results in renal failure. Heredity seems to play a part in determining whether or not a patient will develop essential hypertension. Secondary hypertension, on the other hand, does not appear to be related to heredity but instead to lesions within various organs or tissues. For example, hypertension may be associated with renal disease, endocrine tumors, and constriction of the arteries. Renal lesions may include: (a) glomerulonephritis which would lead to glomerular ischemia, (b) chronic pyelonephritis, and (c) stenosis of the main renal artery usually due to atheroma in the elderly. Endocrine tumors may include (a) pheochromocytoma of the adrenal medulla which results in increased secretion of epinephrine and norepinephrine by the adrenal medullary tumor causing excess stimulation of adrenergic receptors in the production of a vasoconstricting hormone and thus, in peripheral vasoconstriction and cardiac stimulation, (b) adenoma of the adrenal cortex which leads to a salt-retaining hormone with resulting aldosteronism and, (c) large doses of glucocorticoids may exert a sodium-retaining effect, therefore, leading to the hypertension of Cushing's syndrome. Constriction of the arteries may appear clinically as coarctation of the aorta, a principal cause of hypertension in childhood and one readily cured by operation. Polyarteritis nodosa, an acute

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*Ms. Love is Drug Information Specialist, Institutional Pharmacy Programs, University of Maryland Hospital.

inflammation of the small arteries of the viscera, may also be a cause of constriction of vessels. This latter illness may possibly be a type of hypersensitivity and generally ends fatally in a few weeks or months. Of course, there is also arteriolar narrowing just due to age. Other possible causes of secondary hypertension include oral contraceptives and hypercalcemia. The oral contraceptives due to their estrogen content may stimulate hepatic synthesis of renin and, thus, trigger the formation of aldosterone. This hypertension caused by oral contraceptives is reversible if the contraceptive is discontinued. Likewise, the hypertension associated with hypercalcemia is reversible when the hypercalcemia is corrected. This hypercalcemia may be the result of hyperparathyroidism or a calcium infusion (4.)

Unfortunately for the clinician, hypertension is rarely as distinguishable into categories as this discussion suggests. Instead, hypertension is often of mixed etiology. For example, essential hypertension may be associated with other types of hypertension in at least 80 percent of the cases (1). Likewise, essential hypertension is known to predispose the patient to atherosclerosis (5) and then to renovascular hypertension. It is also believed to predispose the patient to pyelonephritis (6) and possibly to primary aldosteronism (7).

There are a number of factors which may lead to adverse prognoses in patients with hypertension. In order of increasing gravity these are (4):

(a) Negro origin
(b) Youth
(c) Male
(d) Persistent diastolic pressure above 115 mm. Hg
(e) Marked cardiac enlargement
(f) ECG changes of ischemia or left ventricular strain
(g) Myocardial infarction
(h) Congestive heart failure
(i) Cerebrovascular accident
(j) Impaired renal function due to hypertensive vascular disease
(k) Retinal hemorrhages and exudates
(l) Papilledema

Hypertension is of great interest, then, to health professionals not only because it is so prevalent, and often has a grave prognosis but also because it has become clear that by treating hypertension, using a variety of drugs with different mechanisms of action, it is possible to protect the patient from the development of numerous associated complications such as stroke or heart or kidney failure (8-10). More specifically, it has been shown that early drug treatment can influence the morbidity and mortality of hypertension. The Veterans Administration Cooperative Study, which measured the effects of treatment on morbidity in hypertension, showed a marked decrease in death and major nonfatal events[a] in actively treated hypertensives as opposed to those who were not treated (11).

The purpose, then, of therapy is generally to lower blood pressure in an attempt to halt or reverse the progressive organ damage. In certain circumstances a cure can be achieved by repair of a stenotic renal artery or coarctation of the aorta, or by removal of a tumor which secretes pressor amines. Usually, however, therapy is directed primarily toward lowering systemic vascular resistance usually by interfering with the vasoconstrictor impulses of the sympathetic nervous system.

Generally drugs can lower blood pressure by acting at the central nervous system, the ganglia, the nerve endings or the vascular adrenergic receptors. Additionally, drugs may act directly on vascular smooth muscle to alter blood pressure. Table I reviews the most commonly used oral antihypertensive agents, their mechanisms of action, availability, usual antihypertensive dose, duration of action and adverse effects associated with the use of each drug.

The drugs listed in Table I are used individually or in combination to treat hypertension of varying degrees of severity. The rational and safe combination of antihypertensive drugs may, for example, mean that their mechanisms of action complement or augment each other. One such antihypertensive combination is the combination of a diuretic, reserpine, and hydralazine all of which affect hypertension by different mechanisms and therefore contribute to the effectiveness of the combination. Such a combination is also utilized to help reduce the risks of adverse effects. On the other hand, one should not choose a drug combination consisting of a diuretic, reserpine and guanethidine since reserpine and guanethidine have similar mechanisms of action.

One of the newest and perhaps one of the most controversial oral antihypertensive agents listed in Table I is propranolol (Inderal^R).

Currently, propranolol is approved in the U.S. for a number of conditions which include cardiac arrythmias, subaortic stenosis, hypertension, and for the preparation of patients with pheochromocytoma for surgery. It may also be useful in some patients with angina uncomplicated by congestive heart failure, and for the temporary treatment of the cardiac effects of hyperthyroidism (13-14). Propranolol may also be of benefit in some patients with hyperkinetic heart syndromes (15), migraine headache (16), essential tremor (17, 18), anxiety (19), psychoses (20), and septic shock (21,22). Morelli (33) pointed out that clinical trials of varying qualities have reported the potential use of propranolol for at least 34 disorders.

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[a] Includes congestive heart disease, cerebrovascular thrombosis, cerebral hemorrhage, myocardial infarctation, grade three or four retinopathy, and azotemia.

TABLE I

ORAL ANTIHYPERTENSIVE THERAPY

GENERIC NAME	PROPOSED MECHANISM OF ACTION	STRENGTH OF COMMERCIAL PRODUCT (mg.)	USUAL DAILY DOSE (mg.)	(SINGLE DOSE) DURATION OF ACTION	COMMON ADVERSE EFFECTS
Mecamylamine (Inversine®)	Ganglioplegic Agent Blocks interruption of transmission in sympathetic ganglia, thereby, decreasing sympathetic vascular tone resulting in a fall in blood pressure.	2.5, 10	10-120 (in 3-4 doses)	6 hours	More central nervous system effects than pentolinium; tremors, mental confusion, seizures, mania, depression, orthostatic hypotension, anuria, constipation and most of the adverse effects associated with the use of pentolinium.
Methyldopa (Aldomet®)	Probably acts via a false transmitter which displaces stored norepinephrine at the nerve endings.	250	750-4000 (in 3 doses)	8 hours	Uncommon and rarely severe; drowsiness, dry mouth, mild gastrointestinal symptoms (diarrhea and constipation), postural hypotension, fever, skin rash, depression, decreased libido.
Pentolinium (Ansolysen®)	Ganglioplegic Agent Blocks interruption of transmission in sympathetic ganglia, thereby, decreasing sympathetic vascular tone resulting in a fall in blood pressure.	20,40,100	60-1500 (in 4-6 doses)	4 hours	Orthostatic hypotenstion, anuria, severe constipation, mydriasis, difficulty in accomodation, dry mouth, occasional diarrhea, nausea, heartburn, anorexia, abdominal discomfort, bitter taste.
Propranolol (Inderal®)	Centrally mediated reduction in peripheral vascular resistance or suppression of renin secretion.	10,40	20-600 (in 3-4 doses) Usual dose is 160 mg. Daily doses should not exceed 1 g.	2-3 weeks are needed to produce peak pharmacologic effects, even though plasma levels are maximal in 2-4 hours after an oral dose.	Marked bradycardia, vertigo, syncope, nausea, diarrhea, dizziness, agranulocytosis, possibly alopecia, hypotension, heart block, fatigue, constipation, skin rashes, depression, paresthesias, nightmares. If contractility is impaired it can aggravate or precipitate heart failure; it may precipitate
Guanethidine (Ismelin®)	Produces selective adrenergic postganglionic blockade by preventing release of norepinephrine at sympathetic myoneural junction, but does not produce parasympatholysis. Also, partially depletes peripheral stores of norepinephrine.	10,25	20-200 (in one dose)	10 days	Bradycardia, decreases in cardiac output, morning and exercise hypotension, diarrhea, dry mouth, muscle tremor, and failure to ejaculate.
Hydralazine (Apresoline®)	Acts directly on vascular smooth muscle to decrease peripheral resistance.	10,25,50,100	100-500 (in 4 doses)	6 hours	Headache (usually disappears in 7-10 days if drug continued); tachycardia and palpitation; anorexia, nausea and vomiting, and diarrhea. Nasal congestion, conjunctivitis, and febrile reactions occur less frequently. May precipitate lupus-like syndrome if taken in doses above 400 mg. daily for over 6 months.
Hydrochlorothiazide (Esidrix®)	Exact mechanism of action is poorly understood. Initially it appears to act by decreasing circulating blood volume and decreasing cardiac output.	25,50	50-100 (in two doses)	8-12 hours	Neutropenia, thrombocytopenia, rash, mild anorexia, nausea, constipation, diarrhea, potassium depletion, orthostatic hypotension, weakness, and aggrevation of pre-existing myopia.
Propranolol (Inderal®)					asthma attacks; it may block protective reaction to hypoglycemia.
Reserpine (Serpasil®)	Inhibits the transport and binding of norepinephrine and epinephrine at the intraneuronal level.	0.1,0.25	0.5-1.0 (in one dose)	2-6 weeks	Depression, peptic ulceration, weight gain, nasal stuffiness, fluid retention, lassitude, decreased libido, nightmares, lactation, drowsiness, diarrhea, dizziness, extrapyramidal side effects, and it may precipitate suicidal tendencies.

One of the most controversial uses of propranolol, however, is as an antihypertensive agent. It has been reported that blood pressure may be raised, unaffected or depressed by propranolol. Glover and Hutchinson (34) found that intravenous propranolol increased the rise in blood pressure and systemic vascular resistance in man caused by noradrenaline. Black *et al.* (35), on the other hand, reported that blood pressure in anesthesized dogs following intravenous propranolol was unaffected by the drug. Numerous other investigators (36-39) have reported little or no fall in blood pressure after intravenous propranolol in man. Propranolol by mouth has been reported to lead to a fall in blood pressure after a week (40) or a month or more (25, 39, 41), whereas, in other investigations no change (42-45) or only an occasional fall (44-47) in blood pressure has been found.

Various possible mechanisms have been suggested to explain the hypotensive effects of beta adrenergic blocking agents such as propranolol. It is probably related in some manner to the beta adrenergic blocking properties because Kincaid-Smith (68) reported that all beta blocking agents tested showed an antihypertensive effect. With propranolol the dose required to produce beta blockage is often considerably less than the hypotensive dose, therefore, suggesting that some effect other than the beta adrenergic blocking action is at least partially responsible for the hypotensive effects of propranolol.

The proposed mechanisms of action may include the following: a baroreceptor effect (48), and effect of metabolites (49), and effect on the central nervous system (5), a gradual fall in peripheral resistance in response to the low cardiac output (51), and an effect on renin (29-31). In reality, propranolol probably lowers elevated arterial pressure by two or possibly three of these mechanisms. First, it reduces myocardial contractility, heart rate, and cardiac output by decreasing sympathetic stimulation by the heart (23-25). This hypotensive effect is especially important when propranolol is coadministered with diuretics or vasodilating drugs that reflexly increase sympathetic stimulation and cardiac output (26-28). Secondly, it may decrease secretion of renin by human kidneys (29-31). Thirdly, large doses of propranolol may exert an antihypertensive effect by way of cathecholaminergic neurons in the central nervous system (32).

Koch-Weser (52) suggested that probably the effects on the sympathetic nervous system and the effects on renin are the most important mechanisms in doses up to 160 mg. daily due to the fact that both of these mechanisms involve an antagonism of endogenous functions. The intensity of this antagonism by propranolol of the sympathetic nervous system and renin activity depends on various patient variables and other drug therapy, thus, possibly accounting for much of the variation in the antihypertensive effects of propranolol (24, 25, 48, 53). The antihypertensive effect of propranolol has, in fact, been shown to be proportional to the patient's plasma renin level before treatment (30). Propranolol should also be effective in cases of hypertension associated with high sympathetic tone and cardiac output (27).

As stated earlier, variable hypotensive effects have been reported with the use of oral propranolol (Table II) due to individual variation in drug disposition. These differences in drug disposition may include differences in plasma binding of the drug, differences in metabolism by the liver, or differences in production of various metabolites of propranolol (62).

Oral doses of propanolol range from 20 mg. daily to as much as two grams daily. The average daily oral antihypertensive dose of propranolol is in excess of 160 mg. daily. Generally, starting doses range from 40-80 mg. daily in four doses. This starting dose is then slowly adjusted upward at two to three week intervals to avoid cumulative pharmacologic effects. This dose can be increased until a desired effect is achieved unless the patient's heart rate slows to less than 50-60 beats/minute. The maximum daily dose of propranolol is two grams but rarely does the antihypertensive dose exceed one gram since there appears to be little additional hypotensive effects above the one gram dose (58). Hansson (49) has suggested that to help decrease the large number of tablets the patient must consume and the frequency of dosing, propranolol may be given twice daily. This suggestion was based on knowledge that at least one of propranolol's metabolites (4-OH propranolol) is equally effective as a beta blocking agent and, in fact, has a considerably longer plasma half-life than propranolol (Fig. 1).

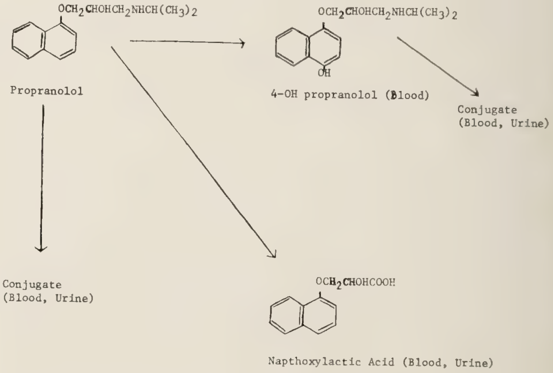

Figure 1: The Metabolism of Propranolol

None of the suggested dosage regimens apply if the patient is in renal failure, since it has been shown (25, 57, 60) that the absorption of propranolol is delayed in

(Continued on page 21)

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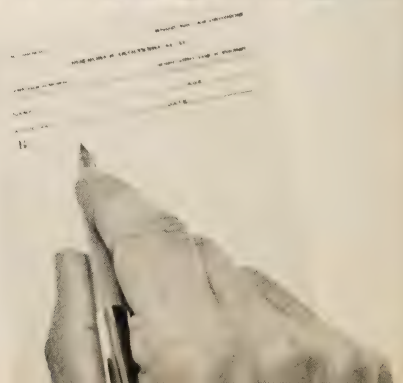
Bioequivalence



the weight of scientific opinion:

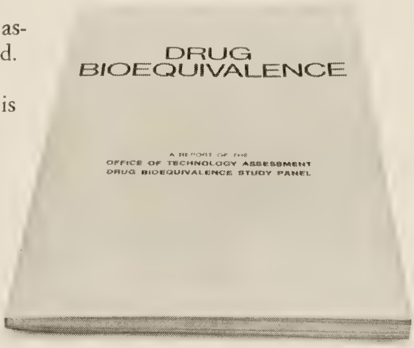
Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."



DRUG
BIOEQUIVALENCE

A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

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(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

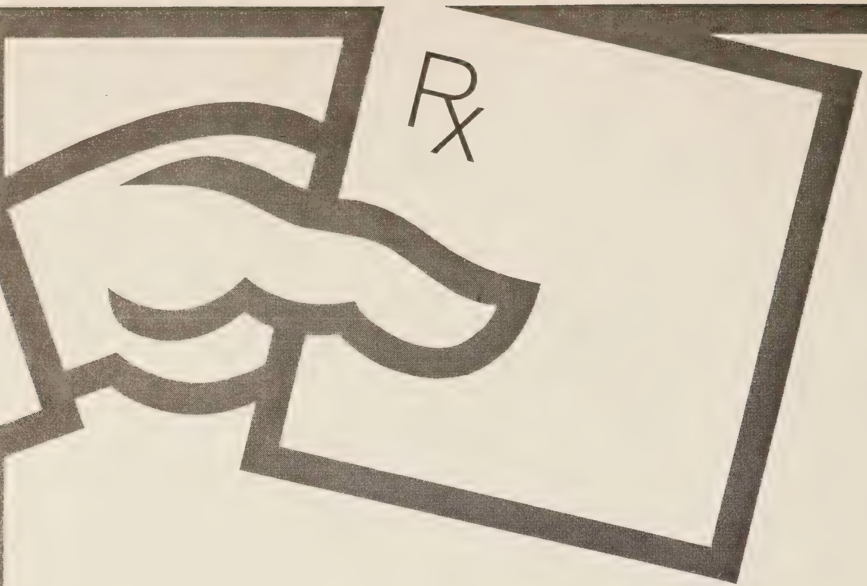
In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

protecting the integrity of the Rx's you dispense



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(Continued from page 16)

renal failure and, therefore, the patient may experience cumulative pharmacologic effects of propranolol.

As the studies in Table II suggest, propranolol is most effective when coadministered with other antihypertensive agents or when used in high renin level hypertension cases.

Several studies have shown that the combination of propranolol and hydralazine is effective and associated with few side effects (62-64). Propranolol produces a slight increase in peripheral resistance which is counteracted by hydralazine. On the other hand, the troublesome side effects of hydralazine resulting from reflex sympathetic stimulation, tachycardia, nausea, headache and angina pectoris, are effectively counteracted by propranolol.

Perhaps the most promoted hypotensive mechanism of propranolol is its effect on plasma renin levels. Michelakis and McAllister (31) showed, for example, that propranolol consistently and significantly suppressed the response of plasma renin activity to stimuli such as the upright posture and sodium deprivation, while receptor blockade with phenoxybenzamine produced little effect. Maximum suppression of plasma renin activity occurred at peak plasma propranolol levels of about 30-50 ng. per ml., which correlates well with blocking levels after oral doses. Bühler *et al.* (30) studied the antihypertensive effects of propranolol in 47 hypertensive patients whom they classified according to normal, high, or low plasma renin activity. It was uniformly effective in 13 patients who had malignant, renovascular, or essential hypertension, and who all had high renin activity. In 22 patients with normal renin levels, propranolol again produced substantial but less consistent decreases in blood pressure. The drug was uniformly ineffective, however, in 12 patients with low renin essential hypertension. In all of these groups, the action of propranolol closely correlated with both the control renin levels and the degree of renin suppression produced. In those patients in whom propranolol was effective, suppression of renin was sustained for up to 12 months with no alteration in dosage of propranolol. The mean dose of propranolol used was about 2 mg./kg./day. This is considerably less than that given by some other investigators who have claimed a high success-rate with larger doses (25, 48, 53, 54) but they have not given details of plasma renin activity in their patients. The long term effect of high-dose propranolol treatment on plasma renin activity, therefore, needs further investigation.

Renin plays such a crucial role in many forms of hypertension due to its role in the elaborate renin-angiotensin system. Renin, a proteolytic enzyme, is stored and possibly manufactured in the juxtaglomerular cells within the walls of the afferent arterioles of the glomeruli. This enzyme has no vasoconstrictor or pressor properties of its own but it does act on a substrate (angiotensinogen) circulating in the blood, to yield (angiotensin I). Angiotensin I, while circulating through the lung and kidney, is further acted upon to yield angiotensin II. The latter substance (angiotensin II) is a very potent vasoconstrictor which acts on the smooth muscle of the arteriolar wall to cause contraction. As a result, peripheral resistance is increased and blood pressure rises. It is, then, by lowering existing renin levels or preventing further increases in renin that propranolol indirectly alters the vasoconstrictor effects of angiotensin II and, thereby, lowers blood pressure.

These uses of propranolol as a antihypertensive agent are generally considered to be associated with fewer adverse effects than most hypotensive agents, although Greenblatt and Koch-Weser (66) suggested that serious adverse effects may occur after even small doses of propranolol and that patients with more severe underlying disease may be predisposed to adverse effects with this drug. Normally, for example, propranolol does not block alpha receptor stimulation, it leaves sympathetically mediated vasoconstrictor reflexes intact and causes neither orthostatic hypotension nor disturbances in sexual function. It appears to have minimal effects on plasma volume in the usual patient with essential hypertension (51, 65). Propranolol can, however, precipitate cardiac failure in patients dependent on sympathetic stimulation of the myocardium (66), but this is rare during hypertensive therapy (51). Propranolol should not be used in patients with a history of airway obstruction as its beta blocking effects may precipitate asthma attacks or other breathing difficulties. Likewise, this drug may worsen severe peripheral circulatory insufficiency (53). Finally, propranolol appears to cross the placenta and may slow the fetal heart as well as reduce the maternal cardiac output and, thereby, decrease the perfusion of blood to the fetus (67). Additionally, it was suggested that propranolol may precipitate neonatal hypoglycemia.

In conclusion, propranolol, although much research is still needed on its role in hypertensive therapy, is probably a reasonably safe and useful hypotensive agent. It should primarily be used in conjunction with other antihypertensive agents to augment their effects and to minimize adverse effects of either drug. Likewise, it should be used in cases of hypertension associated with high renin levels. It should not, however, be used in cases of hypertension associated with low renin levels, nor in large doses in patients with renal failure, in patients with obstructive airway disease, in patients in whom it is possible to precipitate congestive heart failure, or in pregnant women.

TABLE II

SOME STUDIES ON THE HYPOTENSIVE PROPERTIES OF PROPRANOLOL

Investigator	Number of Patients	Effectiveness of Propranolol
Bühler *et al.* (1972) (30)	32	The greatest fall in blood pressure (84%) was noticed in high renin patients as compared with 60-47% falls in blood pressure in the moderate and low level renin patients, respectively.
Bühler *et al.* (1973) (54)	96	Propranolol given alone proved effective in many hypertensive disorders, except in low renin hypertensions.
Clark and Goldberg (1972) (59)	23	These investigators claim that guancydine plus propranolol can effectively reduce blood pressure in patients with even the most severe and refractory hypertension.
Franzen and Pasternak (1972) (57)	8	Case report of 8 patients with renal failure who were sucessfully treated for resistant hypertension with propranolol.
Humphreys (1968) (46)	18	Even with oral doses of 360 mg. daily, propranolol failed to effectively control these patients' hypertension. It was suggested by the investigator that this lack of response to propranolol my be due to ethnic differences in susceptibility to the drug.
Lambert (1973) (56)	30	Propranolol alone is doses up to an average daily dose of 267 mg. effectively controlled blood pressure in the supine and standing positions.
Lydtin *et al.* (1972) (25)	21	In doses up to 1 g. daily for prolonged periods, propranolol alone effectively controlled essential hypertension of varying degrees of severity.
Prichard and Gillam (1969) (48)	105	They reported that 87% of the patients were well controlled (sitting diastolic blood pressure of less than 100 mm. Hg). Showed, however, a wide variability in the sensitivity of patients to propranolol, thereby, necessitating individual adjustment of the dose (5 mg. b.i.d. to 1 g. q.d.). It was proposed that propranolol's hypotensive effects appear to be comparable to bethanidine, guanethidine, and methyl dopa.
Richards (1966) (55)	9	Observed a modest fall in blood pressure during therapy with oral doses of propranolol up to 300 mg. daily (average fall in systolic blood pressure was 11 mm. Hg and average fall in diastolic blood pressure was 12 mm. Hg).
Zacest *et al.* (1972) (27)	23	Hydralazine plus propranolol effectively controlled even the most refractory patients.
Zacharias *et al.* (1972) (53)	303	They reported that 88% of the patients were well controlled (sitting diastolic blood pressure of less than 100 mm. Hg.).

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calendar

November 16 (Sunday) Alumni Association Oyster Roast, Overlea Hall.

November 25—Simon Solomon Pharmacy Economics Seminar—Friendship International Inn.

January 16-23—MPhA Seminar and Tour Mexico City-Acapulco.

February 8 (Sunday) BMPA Installation Banquet.

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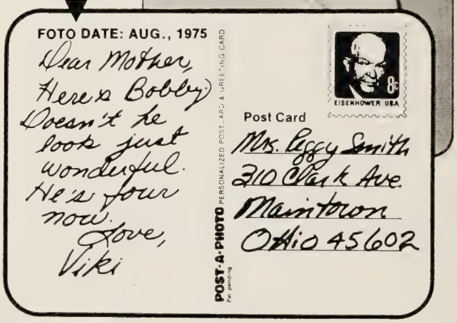

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1 - Senator Margaret Schweinhaut, (D), Montgomery County addressed the Prince Georges-Montgomery County Pharmaceutical Association Annual Installation Dinner Dance held at the Sheraton in Silver Spring, Nathan I. Gruz, Executive Director, MPhA who served as Toastmaster and Installation Officer, introduced Senator Schweinhaut.

2 - (left to right) Officers of Prince Georges-Montgomery County Pharmaceutical Association: Edward S. Sandel, President; Robert L. Koenig, Treasurer; Lawrence F. Gusman, 1st Vice President; Leonard J. DeMino, 2nd Vice President and Paul Reznek, Executive Secretary.

3 - Simon Zvares (r) receives past President's Award from Gary McNamara of H. B. Gilpin Company.

4 - Edward S. Sandel, incoming President, receives gavel-plaque from Ben Mulitz of District Wholesale Drug Company.

5 - Simon Zvares (r) receives Certificate of Appreciation plaque from Paul Gallagher, General Manager of Washington Wholesale Drug Exchange.

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Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

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Pharmacy Changes

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Ferndale-Burwood Drugs, Martin E. Deming, President; Burwood Plaza Shopping Center, Glen Burnie, Maryland 21061.

MEMCO Prescription Pharmacy #557, W. Fisher, President; 6501 Baltimore National Pike, Baltimore, Maryland 21228.

Changes of Ownership, Address, Etc.

Ritchie Prescription Pharmacy, Robert R. Kantorski, (Change of ownership—Albert G. Greenberg); 5002 Ritchie Highway, Baltimore, Maryland 21225.

Central Drugs, Irvin L. Kamanitz, President, (Change of address—Main and Division Streets); 208 West Main Street, Salisbury, Maryland 21801.

Greenway Pharmacy, Inc., Melvin Levy, President, (Change of ownership—Morton L. Pollack); 3401 North Charles Street, Baltimore, Maryland 21218.

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Woodside Pharmacy, Mel Levy; 8301 Harford Road, Baltimore, Maryland 21234.

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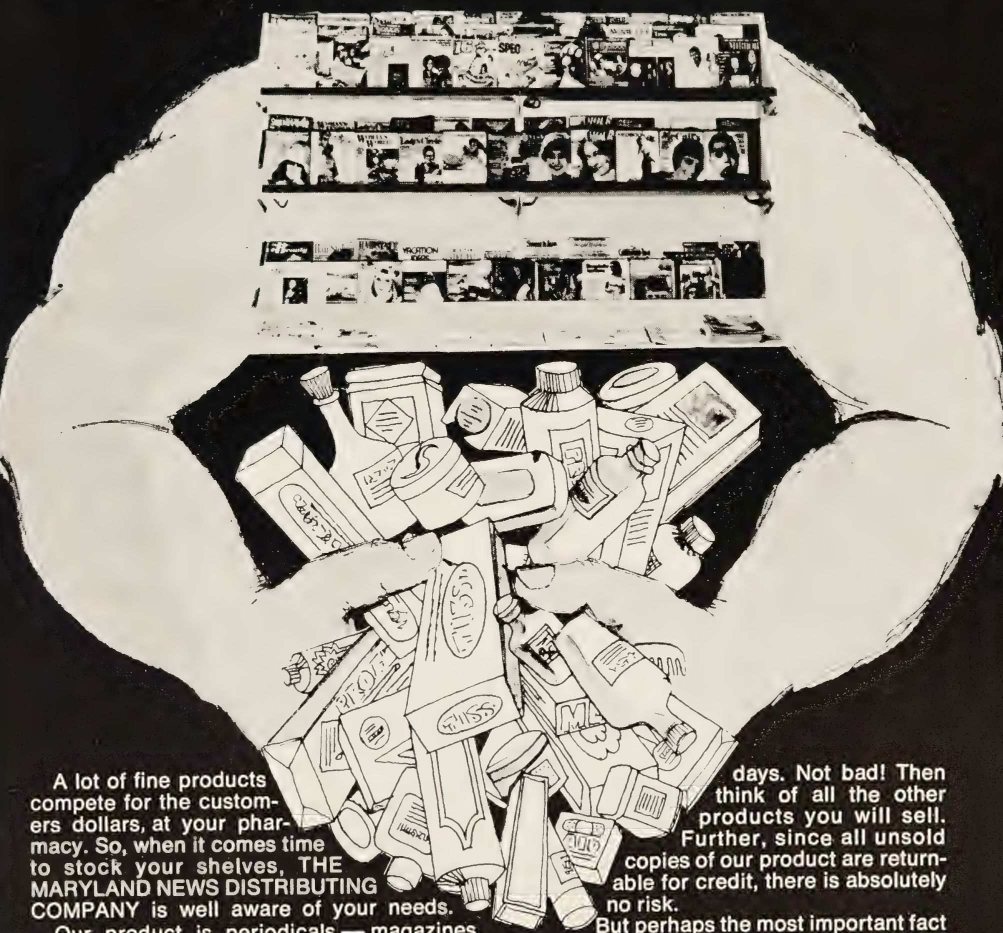

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U.S.P. Drug Product Problems Report

NO. 10

Published by the U.S.P. Convention, Inc.

Edited by JOSEPH G. VALENTINO, J. D.

Listed below are case studies which have resulted from the Drug Product Defect Reporting Program.*

These new case studies are intended to help practitioners become aware of problems involved in producing and maintaining high quality in drug products, thereby assisting them in detecting defective products and helping them avoid subjecting drugs to deleterious conditions of storage and handling. No reflection on any specific manufacturer, distributor, pharmacist, or product is intended or should be inferred from the case studies.

CASE STUDIES

I. Product Recalls

A. *Mislabeled Container*

A community pharmacist in California was responsible for the recall of diphenhydramine hydrochloride capsules. He noted in a Drug Product Defect report that the face of the container's label listed the strength as 25 mg. per capsule while the side panel indicated 50 mg. per capsule. FDA checked this information out and verified that the capsules were the 25 mg. strength. The recall of the mislabeled containers was made by the company in January.

B. *Drug Packaged with Wrong Insert*

Recall of a cardiac depressant was initiated by the manufacturer because the drug was packaged with an insert for a product used in the treatment of obesity. This error was detected by an Illinois community pharmacist. The report led to a FDA visit to the distributor to identify the manufacturer who agreed to a voluntary recall during the follow-up inspection.

C. *Vials Contained Precipitate*

Magnesium Sulfate 30 ml. vials were recalled recently as the result of a report from a Virginia hospital pharmacist that one lot contained very fine dark brown precipitate throughout many unopened vials. The company recalled three lots of the injection.

D. *Mold Growth in Pour Bottle of Solution Used in Surgery*

A Florida hospital pharmacist sent a report to the DPDR system and at the same time notified the manufacturer of mold growth in a 2000 ml. pour bottle of Sorbitol Solution used in surgery. The company removed the lot from his hospital and the product was recalled.

E. *Insufflator Recalled*

An alert community pharmacist in Oklahoma questioned the safety of a plastic insufflator marketed with a vaginal powder. He also noted that the patient instruction sheet was difficult to understand and contained errors. The insufflator had been made from a fountain syringe vaginal nozzle by cutting off the end and had rough edges that could injure vaginal tissue.

When the firm was advised of these deficiencies, marketing of the device was discontinued. The package insert is being revised.

In addition, this report identified for the FDA an unregistered manufacturer. Prior to this report FDA was unaware of the firm or the product.

F. *Product Claimed Aspirin-Free Recalled*

Reports by several community pharmacists called FDA's attention to a potentially dangerous situation with the introduction of a new over-the-counter product that was labeled aspirin-free. The following paragraph appeared in the *HEW Fact Sheet*, Nov. 18, 1974.

"The products contain the pain reliever "salsalate,' which converts to sodium salicylate in the body. FDA is concerned that consumers may use these drugs as an addition to aspirin or other salicylate because both are labeled 'Aspirin-Free.' Such concurrent use with other salicylates could lead to serious salicylate toxicity. Additionally, FDA believes that the use of these products without knowledge that they contain a salicylate could

---

*The work upon which this publication is based was performed pursuant to Contract No. FDA 72-88 with the Public Health Service, Food and Drug Administration, Department of Health, Education and Welfare.

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lead to excessive bleeding in patients on anticoagulant therapy such as sodium warfarin."

The firm agreed to remove the product from the market and recall any outstanding stock. This action was taken within 10 days of receipt of the pharmacists' reports.

G. *Mold on Tablets*

A recall was initiated by a manufacturer whose analgesic/muscle relaxant product was contaminated by molds subsequently identified as Neurospora, Penicillium and Aspergillus types. The initial report was made by an Arizona community pharmacist who noticed mold on the tablets and container. A second report of mold contamination stimulated action by the firm. Laboratory analysis of the fiield samples confirmed mold contamination and the firm agreed to recall.

H. *Expectant Mothers Receive Physician's Samples for Antiparkinson Drug*

Three pharmacists from the New York area reported concern from customers who had received physician samples of an antiparkinson drug mailed to their homes just before Christmas. The samples were immediately recalled by the company. An outside mailing firm had inadvertently confused the mailing list for physicians with approximately 25 names on a mailing list for expectant mothers.

I. *Changes in Insulin Syringe Labeling*

In November of 1973 a conscientious pharmacist from Kentucky telephoned the U.S.P. concerning potential inaccuracies in insulin syringes, especially if used to mix different types of insulin. The pharmacist believed this to be particularly dangerous in the case of insulin mixtures administered to children. The inaccuracy arose from the "dead space" which is unaccounted for if the insulin is mixed. This report was instrumental in bringing the problem to the attention of the FDA. As a result, the November 15, 1974 Federal Register proposed a new regulation of insulin syringes, which calls for the following warning statement to appear on insulin syringe labels: "WARNING" For patients who mix two types of insulin: Do not change (a) the order of mixing that the physician has prescribed or (b) the model and brand of the syringe and needle, without first consulting your physician. Failure to heed this warning can result in dosage error."

J. *Labeling Error*

A late December, 1974 report from a Wisconsin community pharmacist reported bottles of 1000 tablets of acetaminophen which were labeled *5 mg.* FDA investigated and found that the label was intended to read *5 gr.*, not 5 mg. The company instituted a recall.

(Part II Concluded in August issue)

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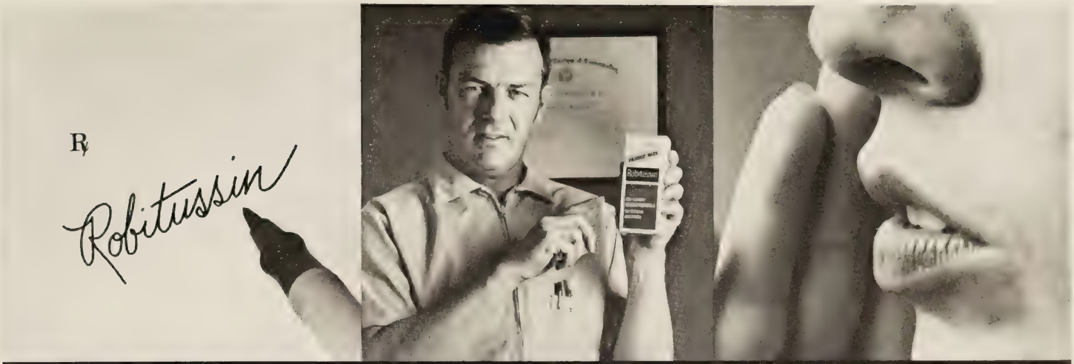
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TAMPA News Notes

The annual meeting and convention of the TAMPA was held June 26 at the Baltimore Hilton Motor Inn, Pikesville, Maryland, with twenty members in attendance.

The following individuals were elected officers for 1975-76:

John R. Fagen, Chairman, Board of Trustees
Trustees: Abrian Bloom, Herman Bloom, John C. Matheny, John A. Crozier, Joseph Hugg, Kenneth L. Mills, William L. Nelson and Louis M. Rockman.
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John A. Crozier, Secretary-Treasurer Emeritus
William A. Pokorny, Secretary-Treasurer
C. Wilson Spilker, Assistant Secretary-Treasurer

Reports by the secretary and auditor were read and accepted. It was noted that members failing to pay annual dues by September are to be dropped from the organization.

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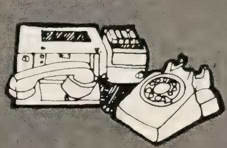

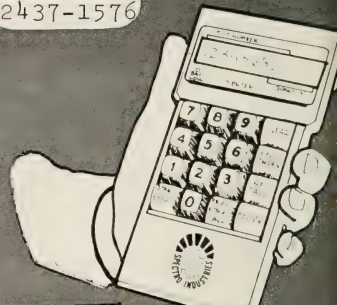

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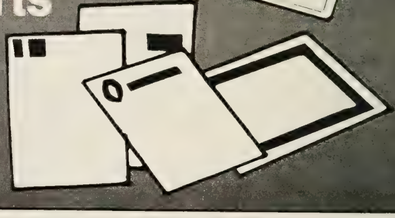

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THE MARYLAND PHARMACIST

Official Journal of
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AUGUST 1975
VOL 51
NO 8

In Memoriam:
Samuel L. Fox M.D., 1915-1975

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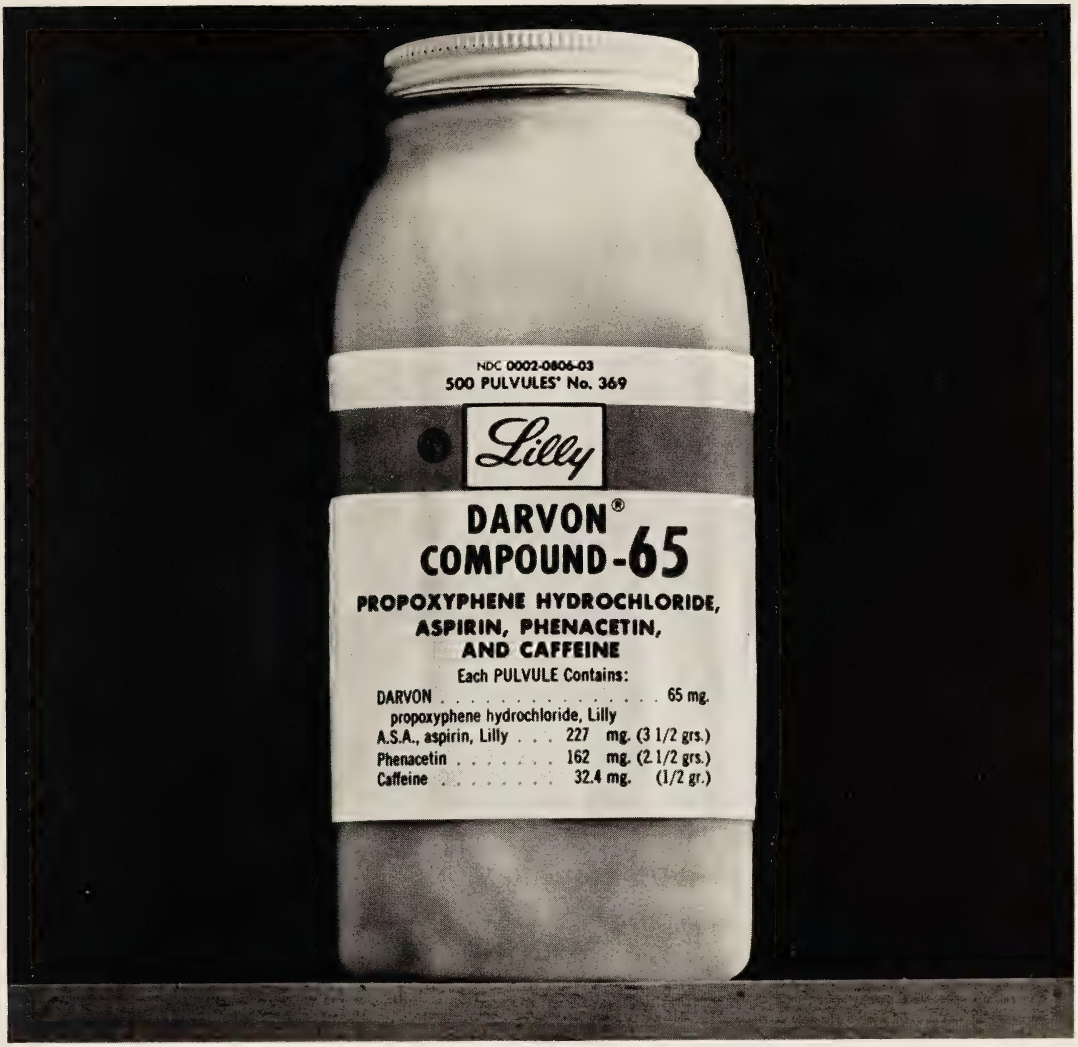
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BENTYL TAB 20MG
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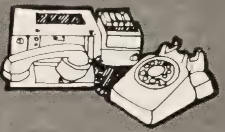

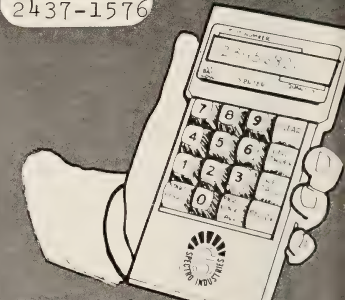

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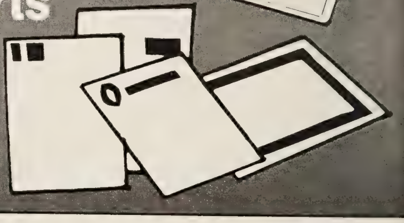

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AUGUST 1975 VOL. 51 NO. 8

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SAMUEL L. FOX, M.D.

1915 1975

Dr. Samuel L. Fox, past president of the Maryland Pharmaceutical Association Foundation, an honored alumnus of the University of Maryland School of Pharmacy and director of the Maryland Drug Abuse Administration since 1972, died at South Baltimore General Hospital August 3, following a heart attack.

Dr. Fox, 60, had a long and distinguished association with the MPhA and was a leader in medical, civic and community affairs in both the State of Maryland and in the Baltimore area. He was graduated from the School of Pharmacy in 1934 and served as a clinical associate professor of pharmacy there until his death. He also held faculty appointments at the University of Maryland Medical School, where he was clinical professor of ophthalmology and assistant professor of pharmacy.

In recent months he had also assisted in the operation of the Mental Health Administration, one of a number of special medical projects to which he had been assigned in addition to his regular duties for the State Department of Health and Mental Hygiene.

He had practiced ophthalmology and otolaryngology for much of his career before taking the state post and also did plastic surgery connected with the ears, nose and throat.

A consultant in ophthalmology at South Baltimore General, University and Mercy hospitals and the Greater Baltimore Medical Center, he was a former head of that department and of otolaryngology at South Baltimore, where he had also been director of medical education and held a number of other posts.

In addition to his other hospital posts, he had served on the staffs at St. Joseph Hospital and Church Home and Hospital.

He had also served as a consultant to the Social Security Administration, and was a member of the advisory council of the Essex Community College, the Technical Review Committee of the Regional Planning Council and the Industrial Eye Health and Safety Committee of the National Society for the Prevention of Blindness.

He was a diplomate of the American Board of Ophthalmology, the American Board of Otolaryngology and the International Board of Surgeons.

Dr. Fox had served as president of the Maryland Industrial Medical Association, the Maryland Ophthalmological Society and had served on committees of the Baltimore City Medical Society, the Medical and Chirurgical Faculty of Maryland and the Medical Alumni Association of the University of Maryland.

He also belonged to the Baltimore County Medical Society, the American and Southern medical associations, and eight other honorary, professional or scientific associations.

In addition, he was a fellow of nine professional groups.

He had won several awards for his exhibits at medical meetings and was the author of more than 50 articles in professional journals, and also contributed to several medical books.

He had also written a book entitled "Industrial and Occupational Ophthalmology," and was preparing a history of eye glasses of which he had a large collection with specimens dating back to 1740.

A native of Baltimore, he graduated from City College in 1931 and then obtained two degrees from the School of Pharmacy at Maryland before graduating from the medical school in 1938.

He served as an intern at Mercy and South Baltimore General hospitals and as a resident at the latter hospital and the Baltimore Eye, Ear and Throat Hospital.

Dr. Fox also did graduate work at Colby College, the Institute of Ophthalmology at the New York Eye and Ear Infirmary, at Temple University and with several doctors.

He was an honorary life trustee and former president of Temple Oheb Shalom and had served as vice chairman of the board and chairman of the Council of Regional Presidents, of the Union of American Hebrew Congregations, as well as holding a number of other offices with both groups.

The brotherhood of the congregation had honored him in with a testimonial dinner in 1967 and he also held the Award of Merit of the Industrial Medical Association Health Conference, the award of honor of the Wisdom Society and the honored alumnus award of the pharmacy school's alumni association.

A charter member and former president of the Berkeley Park Association, he was a member of the Center Lodge of the Masons, the Scottish Rite and Almas Temple.

He was also a member of the Suburban Club, the Ancient and Honorable Mechanical Company and the Civitan Club.

He is survived by his wife, the former Drusilla Wolff, two sons, Samuel L. Fox, Jr., of Baltimore, and Richard A. Fox, of Pikesville, and a sister, Mrs. Bernice Weinstein, of Washington.

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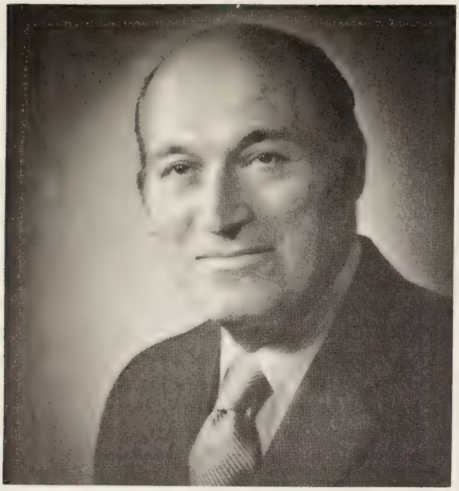
Henry Seidman Elected MPhA President For 1975-76



Henry G. Seidman

Henry G. Seidman, Director of Continuing education and Assistant Professor of pharmacy at the University of Maryland School of Pharmacy, has been elected president of the Maryland Pharmaceutical Association for 1975-76. Mr. Seidman, who has been a member of the association and has served on its committees for more than twenty-five years, was elected at the annual meeting in June. He succeeds Paul Freiman.

Mr. Seidman was graduated from the University of Maryland School of Pharmacy and attended the Johns Hopkins University and the University of Maryland's University College. He has been a member of the faculty at the School of Pharmacy since 1969, when he joined the School as a part-time instructor in pharmacy. Subsequently, he was appointed coordinator of continuing education.

A practicing community pharmacist from 1946 to 1969 both as a pharmacy owner and as a pharmacy employee, Mr. Seidman brings to the MPhA presidency, a firm grasp of the major issues facing the practice of pharmacy in the 1970s.

His affiliation with the MPhA has involved his active participation with the Association as a member of numerous committees, as chairman of the Robert L. Swain Pharmacy Seminar Committee in 1963 and 1975, as a member of the Constitution and By-Laws Committee for several years, and as Speaker of the House of Delegates in 1973-74. In addition, Mr. Seidman has been vice president of the Baltimore Metropolitan Pharmaceutical Association, a member of its Executive Committee and has served on many of its committees. He is a member of the American Association of Colleges of Pharmacy, the American Pharmaceutical Association and has been MPhA delegate to APhA conventions.

In academic pharmacy Mr. Seidman has been a key figure in the continuing education of pharmacists. He has been the co-developer of the School of Pharmacy's Professional Experience Program and has served as chairman of numerous curriculum committees at the School. He is editor of the School of Pharmacy/Alumni Association *Newsletter,* and served as chairman of the Francis S. Balassone Memorial Lecture Hall Dedication Committee.

Mr. Seidman has also been active in community affairs. He was President of the Nathan Hackerman Lodge of B'Nai B'Rith in 1971-72. He is a member of the Beth Jacob Congregation of Baltimore.

calendar MP

December 4 (Thursday)—Maryland Society of Hospital Pharmacists Mercy Hospital — 7:30 P.M.

December 7 (Sunday)—AZO Breakfast Meeting —Holiday Inn

December 7-11—A.S.H.P. Mid-Year Clinical Conference in Washington, D.C.

1976

February 8 (Sunday) BMPA Annual Banquet and Dance—Blue Crest, Pikesville
(Start making up a table of friends)

April 3-8 APhA Annual Convention, New Orleans

June 18-20 MSHP Annual Seminar, Sheraton Fontainebleau, Ocean City, Md.

June 20-23 MPhA Annual Convention, Sheraton Fontainebleau, Ocean City Md.

50,000 New Pharmacists Seen In U.S. By 1990

The number of active pharmacists practicing in the United States is expected to increase by more than 50,000 by 1990, according to a major study of health professional manpower by the U.S. Department of Health, Education and Welfare. The study also shows that more than 16,000 new pharmacists will be added to the profession during the 1970s.

The study is a comprehensive examination of health manpower projections to the end of the Twentieth Century, and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 for $3.00. The official title of the study is *The Supply of Health Manpower 1970 Profiles and Projections to 1990.*

In addition to projecting future growth rates for the profession, the study of practicing pharmacists shows that four out of five pharmacists active in 1970 were working in community pharmacies, with 35 percent being owners or partners and 47 percent being employees. Slightly fewer than 1 in 10 active pharmacists were employed in hospital pharmacies. Four percent were in manufacturing and wholesale activities, and five percent were in teaching, government or other activities.

Among individual states, pharmacist/population ratios ranged from a high of 85 per 100,000 population in Pennsylvania and Massachusetts to a low of 27 per 100,000 in Hawaii. Maryland in 1970 had 2,200 pharmacists serving nearly four million people, or a ratio of 54 per 100,000 residents.

Excerpts and charts from the study follow:

Background

Data on pharmacists cover all active pharmacists in the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. Those few U.S. pharmacists who may be overseas are excluded. Although current estimates include both Federal and non-Federal pharmacists, historical data provided for years prior to 1950 relate only to civilian workers.

The primary sources of information on active pharmacists used here are: the 1966 Survey of Pharmacists

NUMBER OF ACTIVE PHARMACISTS, BY AGE GROUP AND SEX: DECEMBER 31, 1970

Age group	Both sexes		Male		Female	
	Number	Percent distribution	Number	Percent distribution	Number	Percent distribution
All ages[1]	129,300	100.0	117,620	100.0	11,670	100.0
Less than 25 years	3,860	3.0	3,150	2.7	710	6.1
25-49 years	79,610	61.6	70,930	60.3	8,680	74.4
25-29	21,270	16.4	17,910	15.2	3,360	28.8
30-39	31,630	24.5	28,470	24.2	3,160	27.1
40-49	26,720	20.7	24,560	20.9	2,160	18.5
50-64 years	34,660	26.8	32,880	28.0	1,780	15.3
50-59	22,170	17.1	20,950	17.8	1,220	10.4
60-64	12,500	9.7	11,930	10.1	570	4.8
65 years and over	11,150	8.6	10,650	9.1	500	4.3
65-69	5,770	4.5	5,520	4.7	260	2.2
70-74	3,260	2.5	3,110	2.6	150	1.2
75 and over	2,120	1.6	2,020	1.7	100	0.8

[1] Includes active pharmacists in 50 States, District of Columbia, Puerto Rico, and the Virgin Islands.

Source: Total active pharmacists: National Association of Boards of Pharmacy. 1971 Proceedings. *Licensure Statistics and Census of Pharmacy.* Chicago, The Association, 1972.

Age and sex distribution based on data in: Reinhart, George R. *Pharmacy Manpower.* Public Health Service Pub. No. 1000-Series 14 - No. 2. U.S. Government Printing Office, 1969.

Note: Figures may not add to totals and subtotals due to independent rounding.

conducted by the National Center for Health Statistics (NCHS); the 1970 Licensure Statistics Census of the National Association of Boards of Pharmacy (NABP); and censuses of population. The 1966 NCHS Survey and the NABP licensure statistics provide the basic data for most of the estimates presented. Although data from the NABP Census are not consistent with data from the censuses of population, trend data on active pharmacists from NABP appear to be internally consistent. Nevertheless, historical trends shown represent a combination of both estimates and counts and should be used with caution. Individual tables provide detailed explanations and sources.

The Bureau of Health Resources Development (BHRD) has contracted with the American Association of Colleges of Pharmacy (AACP) to make recommendations on how best to improve the data base and is now supporting the AACP in improving the data on pharmacists. The AACP-BHRD survey of all active pharmacists in the United States, which began in September 1972 and continued through mid-1974 was conducted through State licensing boards. In addition to basic demographic items, detailed data were collected on principal form of employment, type of activities, equipment used, auxiliary utilization, and persons served. Upon completion of data collection, this survey will become the most recent data base for the profession. Survey results for several States have already been published.

Current Characteristics and Trends

In 1970, there were approximately 129,300 pharmacists actively engaged in practice in the United States. Pharmacists are a relatively young group, with nearly two out of three under 50 years of age and thus expected to continue in the profession for at least the next 15 years. Over 40 percent of all pharmacists in 1970 were less than 40 years old. This relatively young age distribution reflects the increasing enrollments in schools of pharmacy over the past decade.

Compared with other health professions (except registered nurses), pharmacy has a high proportion of women. According to the National Association of Boards of Pharmacy, as seen in Table 58, 11,700, or 9 percent, of active pharmacists were women. This proportion is expected to rise in the future as a result of the recent increases in enrollment of females in pharmacy schools. *The American Journal of Pharmaceutical Education* shows that 24 percent of pharmacy students in 1971 were women.

Blacks comprised slightly more than 2 percent of active pharmacists in 1970, according to data from the 1970 Population Census. The proportion of persons of Spanish heritage was also relatively small, slightly less than 2 percent. Current and more comprehensive data on racial-ethnic distribution will not be available until results of the current AACP-BHRD survey are known.

In 1970, pharmacists were disproportionately located in the Northeast—the Middle Atlantic and New England divisions had the highest ratios, 76 per 100,000—with the lowest (54 per 100,000) being found in the South Atlantic division.

Over the past four decades, the number of active pharmacists rose by about 45,000. or an increase of 50 percent. However, the ratio of active pharmacists to population decreased during this period from 68 per 100,000 in 1930 to 62 per 100,000 in 1971.

While there was relatively slow growth in the supply of active pharmacists in the 1960's, enrollments in pharmacy schools began to increase sharply. In the last decade, total enrollment increased by 77 percent, from 10,730 in the 1962-63 academic year to 18,956 in 1972-73. The annual number of graduates has increased by more than one-third, from 3,728 in 1962 to 4,858 in 1972.

Projections of the Supply of Pharmacists to 1990

Projections of the total supply of active pharmacists are shown here under several assumptions as to graduate input. In addition, projections of the supply of active pharmacists are presented on the basis of sex and full-time equivalencies.

Methodology and Assumptions

Estimates of the number of active pharmacists for 1971-90 take into account the estimates of active pharmacists (by age) as of January 1, 1971, new pharmacy graduates, and attrition to both groups. Beginning with the base-year age distribution of pharmacists, new graduates were added year by year to those pharmacists active as of January 1, and age-specific separation rates were applied to the number of active pharmacists each January 1, including new graduates. Estimated "losses" (death and retirements) were then subtracted, by age group, from the active pool, with the pool being aged by 1 year each time.

Data on graduates of pharmacy schools for 1971 were obtained from school reports on FY 1972 capitation grant applications. These applications also provided estimates of projected third-to-last-year enrollment through 1974-75. (Third-to-last-year enrollment was used in order to standardize pharmacy programs of varying lengths.) Graduate data were computed for both the basic methodology and the alternative supply assumptions up to 1978 from the number of third-to-last-year students reported 3 years earlier.

In order to incorporate into the projections the trend toward increasing enrollment of females in pharmacy schools, male and female third-to-last-year students were independently projected by simple linear regression from 1960-71 AACP enrollment figures to 1988. The derived proportions of male and female students were applied to distribute total third-to-last-year enrollment figures according to sex. Based on the experience of recent years, differential attrition rates of 16.3 percent for males and 13.7 percent for females were utilized to generate respective male and female graduate components to 1990. Under this attrition assumption, 83.7 percent of the male and 86.3 percent of the female third-to-last-year students are expected to graduate 3 years later.

NUMBER OF ACTIVE PHARMACISTS, BY TYPE OF EMPLOYER: DECEMBER 31, 1970

Type of employer	Number of active pharmacists[1]	Percent distribution
All types	129,300	100.0
Community pharamacy owner or partner	45,890	35.5
Community pharmacy employee	60,510	46.8
Hospital pharmacy	11,840	9.2
Manufacturing and wholesale	4,750	3.6
Teaching, government, and other	6,310	4.9

[1] Includes active pharmacists in 50 States, District of Columbia, Puerto Rico, and Virgin Islands.

Source: National Association of Boards of Pharmacy. 1971 Proceedings. *Licensure Statistics and Census of Pharmacy*. Chicago, The Association, 1972.

Although projected estimates of supply would vary with different attrition rates, slight variations in the attrition patterns of pharmacy students would appear to have a negligible impact on the overall supply estimates. However, were an undifferentiated (by sex) 10 percent attrition rate applied to third-to-last-year students, under the basic methodology used in this report, an additional 8,000 graduates could be expected over the 20-year projection period. Also, graduate supply would be affected somewhat by the assumed increase in the proportion of female third-to-last-year students (to 32 percent in 1987-88), since a continuing lower attrition rate for females is anticipated. But the differences, as presently seen, are small. Under the basic methodology, for example, if the proportion of female third-to-last-year students were maintained at 24 percent (the 1970-71 rate), and the above differential attrition rates were observed, a decrease of only about 500 graduates would be expected over the projection period.

Separation rates used in the basic methodology and alternative approaches were derived from age-specific rates for males developed by the Department of Labor and from unpublished data for women in the labor force developed by the Bureau of Labor Statistics. These age-specific separation rates are for the general labor force. Although separation patterns are not currently available for pharmacists, it should be noted that their experience may not be identical with that of men and women in the general labor force. Male pharmacists, for example, may tend to stay in the labor force longer than the general population.

The death rate of the general population was assumed to be representative of that of pharmacists. A brief literature search for this group uncovered no empirical evidence suggesting longer life spans than the general population. However, to the extent that life expectancy of pharmacists may be longer than the national average, the death rates used here somewhat overstate losses to the profession. Similarly, if male pharmacists' retirement patterns were lower than those of the total labor force, then the projected supply of active pharmacists would be understated somewhat. For example, if the retirement rates of male pharmacists more closely approximate those of optometrists (about 50 percent lower than the general labor force for those over 50 years of age), the projected total active supply of pharmacists would increase by nearly 6,200 for 1980 and 6,500 for 1990 under the basic methodology—to 152,300 and 186,400 respectively. But studies substantiating such a trend are lacking. Indeed, there is evidence suggesting that the retirement patterns of male pharmacists may more closely approximate those of the general labor force; the proportion of pharmacists employed in community pharmacies (those who are probably more representative of the general labor force) is increasing, while the proportion of self-employed pharmacists, those more likely to retire at a later age, is decreasing. This observation and its implications are reinforced by a comparison between data from the 1960 and 1970 Census of Population showing the proportion of pharmacists as private wage and salary workers to have increased by about 12 percent, while self-employed pharmacists dropped by about 13 percent.

Although no definitive data exist on the separation or reentry patterns of female pharmacists, the separation rates presently used for females may somewhat underestimate losses. Allowing a 7-percent higher separation rate of females would decrease the total active supply of females by about 900 for 1980 and 2,200 for 1990, under the basic methodology, to 19,800 and 33,000 respectively. The overall proportion of females in the total active supply, however, is only slightly affected.

The basic determinant of the future supply of pharmacists is very clearly the enrollment in colleges of pharmacy. As indicated earlier, pharmacy enrollments have increased rapidly since the 1960's, and current legislation encourages continued increases in enrollment in pharmacy schools to 1974-75, and thus a concomitant increase in graduates to 1977. In projecting the total supply to 1980 and 1990, the basic assumptions relate entirely to the output of graduates of pharmacy schools after 1977.

The basic projection methodology assumes an increase in third-to-last-year enrollment after 1974-75 that would be similar to the increase achieved by the schools prior to the initial Federal legislation. The assumption was made that third-to-last-year enrollments beginning in 1975-76 would increase annually at a rate equivalent to that experienced in the 6-year period prior to enactment of the Health Professions Education Assistance Act of 1963 (about 1.5 percent annually). This period was adopted as a reasonable approximation of enrollment growth that might occur despite the absence of massive Federal programs aimed at increasing enrollments.

Two alternative assumptions as to graduate additions were also made. First, as a low projection, the number of graduates after 1978 was held constant. The assumption here is that there will be no further increases in third-to-last-year enrollment after 1974-75 (coincident with expiration of the Comprehensive Health Manpower Training Act of 1971), since public and private support would be continued in such a form that increases in enrollment achieved under the Act through 1974-75 would be maintained, but no further increases in enrollment encouraged.

The second or high estimate assumes that the rate of increase in third-to-last-year enrollment beyond 1974-75 would be midway between the average rate of increase experienced by existing pharmacy schools from 1964-65 to 1971-72 and the average annual rate of increase under the basic methodology. Under this alternative consequently, an average annual increase in third-to-last-year enrollment of 3.7 percent was used. This alternative, in contrast with the basic methodology, assumes increases in enrollment greater than that experienced prior to the period of major Federal support. However, the rate of increase would not be of the magnitude achieved since 1963, given the absence of further massive Federal support to increase enrollment.

Projection Findings. The basic projection of the size of future graduating classes results in a total gross graduate input of 126,931 for the 1971-90 period. The low alternative projects a total gross graduate input of 118,394 and the high alternative, 151,139. The high and low alternatives consequently produce total gross graduate inputs approximately 32,745 graduates apart. However, if Federal support were to continue at the high levels of the early 1970's and the projected rate of increase were to match the 1967-72 experience (about 6 percent a year), a total gross graduate input of 169,500 would result for the 1971-90 period.

A measure of the reasonableness of the projections can be derived by examining the implications of the increase in the projected numbers of third-to-last-year enrollees per pharmacy school. An increase in third-to-last-year enrollment after 1975, similar to the increase achieved by the schools prior to the initial legislation, is assumed under the basic methodology. In line with this assumption, an increase is projected in third-to-last-year enrollment per pharmacy school from 76.9 in 1970-71 to 121.3 in 1987-88 (a 58 percent increase over a 17-year period). During the 1962-63 academic year, third-to-last-year enrollment averaged 53.8 enrollees per school. The increase to 1970-71 was 43 percent over an 8-year period. The projection period is twice as long as the 1962-63 to 1970-71 period.

In the projection methodology utilized in this report, no new pharmacy schools are assumed to be opening during the 1970-90 period. This is consistent with the fact that new pharmacy schools were not established during the study period preceding Federal legislation. The assumption is advanced, consequently, that all projected enrollment increases will take place among existing schools. It is difficult to determine whether pharmacy schools are now operating at capacity or will be at capacity during the projection period. However, it is entirely possible that changes in the pharmacy curriculum or utilization of existing facilities throughout the year would permit existing schools to serve a greater number of students than are presently enrolled.

Under the basic methodology outlined earlier, the supply of active pharmacists is projected to grow from 129,300 in 1970 to 146,100 in 1980, and to 179,900 in 1990. The growth in active pharmacists is thus projected at 16,800 between 1970 and 1980, compared with a 11,500 increase from 1960 to 1970. The projected increase represents a larger percentage gain in 1970-80 than that experienced between 1960 and 1970-73 percent as compared with 10 percent. Between 1980 and 1990, growth in supply is projected to be more rapid—a 33,800 increase, or 23 percent.

The ratio of active pharmacists to population, which was relatively constant between 1960 and 1970, is projected to rise sharply. The ratio is projected at 64 per 100,000 population in 1980, and 72 per 100,000 in 1990. This compares with a ratio of 63 per 100,000 in 1970.

Under the high alternative projection, the supply of active pharmacists is projected to increase to 146,900 in 1980 and 194,200 in 1990. This represents a 14 percent increase between 1970 and 1980, and a 32 percent increase between 1980 and 1990. Under the low alternative, the supply of active pharmacists is projected at 145,600 in 1980 and 171,800 in 1990.

The projection of active pharmacists in 1990 under the basic assumption yields a supply that is 8,100 (or 5 percent) more than the low estimate and 14,300 (or 8 percent) fewer than the high estimate. The low alternative yields a population ratio of 68 pharmacists per 100,000 in 1990, compared with 78 per 100,000 in the high estimate and 72 per 100,000 under the basic assumption.

As noted earlier, a definite upward trend in the proportion of women enrolled in pharmacy schools is evident, and there is no reason to believe that this trend is temporary or sporadic. Also noted was the fact that the

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attrition rate of female students is lower than that of males, resulting in an even greater proportion of female graduates over time.

The increasing proportion of women in pharmacy is important because of the much shorter work-life-expectancy of female professionals and thus their lower professional productivity per pharmacist. There are indications that women pharmacists have a work-life- expectancy about one-half that of the average male pharmacist. Further, women pharmacists have been shown to practice full-time, on the average, about half and part-time about one-fourth of their professional lives. It is therefore reasonable to assume that two part-time pharmacists are approximately equivalent to one full-time pharmacist, based on a 40-hour work week. Converting the projected active supply of female pharmacists to full-time equivalents yields the estimate of active full-time pharmacists to 1990.

The full-time equivalency conversion lowers the 1990 supply estimate by about 5 percent. This procedure reduces the projected 1980 estimate by about 4 percent while the 1970 estimate would be lowered by about 2 percent.

If the alternative separation patterns that were mentioned earlier are examined in terms of numbers of full-time equivalent pharmacists, considerable differences in the above totals are possible.

To illustrate, if female separation rates remain as adopted under the basic methodology, but male death and retirement patterns are lower, e.g., closer to those of optometrists, the 1980 and 1990 projected total full-time equivalent pharmacists would be 147,100 and 177,500 for 1980 and 1990 respectively. However, should female separation rates be 7 percent higher than those presently assumed, and male separation rates approximate those of the general labor force (as assumed), the resultant total full-time equivalent pharmacists for 1980 and 1990 would be 140,300 and 169,400 respectively.

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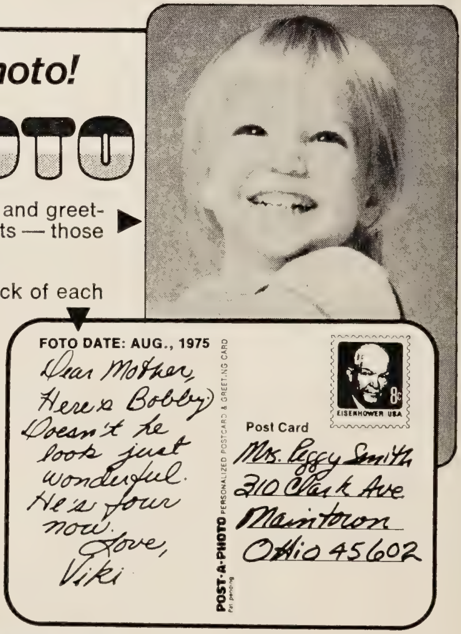

the poison pen

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Winter and Christmas Toxicity Hazards

by Gary Oderda, Pharm.D. and John Bender, B.S.

Christmas is an exciting time of the year for both children and adults. Tragedy, however, strikes at Christmas even more frequently than during the rest of the year. We are all aware of the increased number of deaths from automobile accidents around the Christmas holidays. The flammability of costumes, the Christmas tree and ornaments combined with the presence of candles and overloaded electrical circuits present a potential fire hazard.[1] At this time of the year children have an additional stimulus to ingest non-food items. Many new and interesting looking products appear and it doesn't take long for an ingestion to occur. It is the purpose of this article to discuss various hazards commonly found around the home during the winter and specifically at Christmas time. If additional information is needed on any of these products, or others, feel free to call the Maryland Poison Information Center. As a reminder the Center's phone numbers are 528-7701 for local callers and 1-800-492-2414 toll-free for long distance callers.

PLANTS

Of Christmas plants, Holly, Poinsettia, and Mistletoe are perhaps the best known and most widely used. There is much misinformation that exists concerning the toxicity of these plants due in part to the vast amount of folk lore which surrounds them and in part to the lack of good toxicity studies.

Mistletoe is an evergreen parasitic plant which grows as pendent bushes on the branches of many trees. In Britany it is called "herbe de la Croix" in the belief that it was once a full grown tree and as such was used for the cross of Christ. Because of this degradation, it was reduced to the life of a parasite.

The Druids, an order of priests and astronomers of ancient Britain and Gaul, hailed Mistletoe as the universal healer. The plant was considered a remedy against all poisons.

Shakespeare calls it "the baleful Mistletoe," an allusion to the Scandinavian legend that Balder, God of Peace, was slain with an arrow made of Mistletoe. At the request of the other Gods he was restored to life, and Mistletoe was afterwards given into the keeping of the Goddess of Love. It was ordered that everyone who passed under it should receive a kiss to show that the branches had become an emblem of love and not of hate. Historically, Mistletoe has a great reputation for curing the falling sickness, epilepsy. However, in large doses, the berries were noted to aggrevate the convulsive disorders.

Today we know that Mistletoe, especially the berries, contain appreciable amounts of beta-phenethylamines, tyramine, and tyramine related compounds; sufficient to precipitate convulsions.

Holly, also known as Christ's thorn for its use in legend as the crown of thorns, the red berries signifying drops of blood, has had supernatural powers attributed to it. It was thought to repel lightning and it was believed many years ago that holly could freeze water and cause cattle to kneel in their stalls on Christmas Eve.

A decoction of the powdered leaves has been used as a diaphoretic. Ingesting large amounts of the red berries may cause G.I. irritation with nausea, vomiting and diarrhea. The mild toxicity of holly is probably attributable to the bitter principle, ilicin.

The ingestion of Poinsettia has been described as "Fatal—one leaf has killed a child." Specific information involving this case is not available. In Mexico the leaves are applied as a poultice to the skin and brewed and taken internally by nursing mothers to increase the flow of milk. In a study of 160 rats fed large doses of various portions of the Poinsettia there were no deaths, no symptoms of toxicity nor any change in dietary intake or general behavior.

With specific reference to Holly, Mistletoe and Poinsettia, there seems to be little substantiation for the "extremely toxic" rating held by Poinsettia. Holly, especially the American varieties, also seems to have received an undeserved reputation as being highly toxic. However, there is enough information to support the claim that the berries are emetic and purgative in sufficient quantity. Mistletoe is likely deserving of its reputation as "toxic" especially to children due to the content of beta-phenethylamine, predominantly in the berries.

CANDLES

Candles, either the synthetic or the wax variety are non-toxic. Although some of the scents and coloring used may produce toxicity, the amount of either of these agents is not large enough to be of concern.

CHRISTMAS TREE LIGHT BUBBLING FLUID

This product contains methylene chlorine, a chlorinated hydrocarbon whose toxicity is similar to, but less than, carbon tetrachloride. Although both central nervous system depression and excitation, as well as other effects, occur from ingestion of methylene chloride neither is likely in this case since the total ingestable volume is 3-4 ml.

FIREPLACE COLORS

These products produce brilliant colors when thrown into a burning fire. Violet, blue, green, red and yellow are the most commonly used. Each of these are salts of various metals including copper, barium, selenium, lead, thallium, arsenic antimony and others of a lesser toxicity. This group of products is potentially hazardous. If ingested, and spontaneous vomiting has not occurred, the stomach should be emptied. Further specific treatment would be determined by the condition of the patient and the identification of the specific ingested agent.

ANGEL HAIR

Angel hair (spun glass or glass wool) is only hazardous in that it may produce irritation to the eyes, skin and the gastronintestinal tract if swallowed.

ALCOHOLIC BEVERAGES

Although ethyl alcohol is generally thought of as an agent producing chronic toxicity, acute toxicity may also occur. This is of course especially true in children. Ethyl alcohol has an approximate oral fatal dose of 250-500 grams (500-1000 ml of 100 proof liquor) and approximately 6 ml/kg in children.[2] Symptoms of mild to moderate alcohol intoxication are familiar to us all. In severe intoxication one may also see coma, respiratory depression and death. In addition, hypoglycemia has been reported in young children. Most states consider an individual legally intoxicated if he has a blood level of 150-180 mg%. Stupor and coma are usually seen at 300-500 mg% and levels over 500 mg% may produce fatality.

SNOW SPRAY

These products are aerosols that simulate snow when applied to objects. The snow itself is an inert plastic material and a long chain fatty acid. The propellant is usually methylene chloride or freon. Since this product is an aerosol it would be difficult for a child to accidentally ingest enough of this product from the can to be toxic. If this product were intentionally inhaled in high concentration toxicity from the propellant would be expected as well as the direct effect of particles on the lung. After the product is applied the propellant evaporates and leaves the "snow." This snow is harmless when ingested.

ICICLES OR TINSEL

These thin metal foil streamers are commonly composed of 60% metallic lead and 40% metallic tin. In contrast to their soluble salts, lead acetate or carbonate for example, these metals are fortunately poorly absorbed from the GI tract. Thus the inherent toxicity of icicles is low.

MODEL TRAIN ACCESSORIES

Some toy trains can produce smoke when appropriate smoke pellets or cartridges are used. Three commonly used formulations are 1) meta-terpenyl (an aromatic hydrocarbon) in a wax base, 2) equal amounts of cedar wood oil and mineral oil and 3) kerosene and cedar wood oil. With the exception of mineral oil, all of the above ingredients may produce toxicity. Due to the amount of ingredients per pellet and the formulation of the product, toxicity is unlikely unless a large amount is taken. Some track cleaners contain deodorized kerosene, and this can be quite dangerous if ingested in even small amounts. The major hazard when small amounts are taken is aspiration. When this fluid gets into the lungs a dangerous chemical pneumonia may be produced.

CHRISTMAS TREE ORNAMENTS AND LIGHTS

These products are generally made of either thin metal, plastic or glass. These products are dangerous in that they may produce serious cuts if swallowed. Neither the ornaments, lights, or their paint coating would be expected to produce any toxicity.

CHRISTMAS TREE PRESERVATIVE

The base of a Christmas tree is placed into the preservative to prolong the life of the tree. Most of these products contain a large amount of water and glucose and small amounts of KC1 and quaternary ammonium compounds. Since the two potentially toxic ingredients are present in small amounts no toxicity is expected unless a large amount is ingested.

ROAD SALT

Road salt, halite, and rock salt are commonly sodium chloride. Sodium chloride is obviously not toxic in small amounts. As was previously discussed in the Poison Pen article entitled "Emetics" sodium chloride intoxication has produced fatalities in young children. It is estimated that the human oral lethal dose is about 3 grams/kg in adults and somewhat less than this in children.[4] If a small amount of this product is eaten dilution with water would suffice. If, however, a large amount is taken, medical evaluation and treatment is essential.

WINDSHIELD WASHER ANTIFREEZE

Windshield washer antifreeze may contain a number of ingredients, but the most common, and the most toxic, is methanol. Methanol produces a severe metabolic acidosis and may lead to respiratory depression and death. In addition retinal injury, and blindness is expected in those that survive. All but the smallest of ingestions of this type of product justify an emergency room visit.

AUTOMOBILE ANTIFREEZE

Most of these products (the permanent type) are ethylene glycol. This substance is extremely toxic and its oral human lethal dose is estimated at about 100 ml.[5] Many metabolites are formed, but the oxalic acid appears to be the most dangerous. Cardinal signs produced by ethylene glycol include intoxication without the apparent presence of alcohol, a severe systemic acidosis and renal failure. As with methanol, significant ingestions warrant emergency room treatment.

CHRISTMAS DINNER

Ingestion of large amounts of Christmas dinner have been shown to produce GI discomfort, flatulance, and a sudden acute increase in body weight. Generally no treatment is required.

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THE PRACTICE OF NUCLEAR MEDICINE AND THE ROLE OF THE RADIOPHARMACIST

M. D. Loberg, Ph.D., Schools of Pharmacy and Medicine,
University of Maryland

The practice of Nuclear Medicine has grown from its inception in the early 1940's to the point where today it is a major diagnostic specialty. This growth is reflected in statistics which show that radiopharmaceutical sales increased at an annual rate of 25% per year throughout the 1960's with an additional 700% increase forecasted for the 1970's. Statistics obtained at the University of Maryland Hospital support this trend where total diagnostic procedures increased from 3,000 in 1972 to 7,000 in 1973 to over 9,000 in 1974. The practice of Nuclear Medicine is not restricted to large hospitals. There are at present over twenty nuclear medicine units located in the Baltimore metropolitan area. In addition, nuclear medicine units are currently being developed in private medical centers for use on an outpatient basis. Despite this phenomenal growth and development, many segments of the general public are unaware of the purpose of nuclear medicine or have little appreciation for the relative benefits and risks associated with nuclear medicine procedures.

The practice of Nuclear Medicine can be considered in its simplest form to be the administration of a radioactive drug to a patient and the subsequent determination of the drug's in vivo distribution, metabolism, and elimination. As more and more diseases are being characterized in terms of disordered metabolic function, this ability assumes increasing significance as a diagnostic tool in clinical medicine. An interesting example of this approach is demonstrated by the use of radiopharmaceuticals to measure regional bone function. This type of radiopharmaceutical is concentrated on the surface of bone in proportion to either regional blood flow to the bone or to regional osteogenesis. Examples of such nuclear medicine studies are shown in Figure 1. In both patients the radiopharmaceutical was administered IV and its in vivo distribution determined 3½ hours later. It is immediately apparent that these nuclear medicine bone scans lack the fine structure and detail available to conventional radiography. The studies do, however, give us information that is unavailable through conventional radiography because we are measuring bone function rather than density. The two patients shown in Figure 1 will appear identical under x-ray analysis if no structural alterations are present. However, the patient in Figure 1B shows quite clearly several areas of increased radiopharmaceutical concentration. These areas of increased bone metabolism are noted in almost all osseous lesions including neoplasms, osteomyelitis and healing fractures. The determination of regional bone function is indicated 1) in the management of patients with known malignancy who have persistent bone pain 2) in the determination of the extent of bone disease 3) in the location of suitable biopsy sites and 4) in the planning of radiotherapy portals. Some additional examples of currently used radiopharmaceuticals are given in Table 1 along with their respective diagnostic utility. Each of these radiopharmaceuticals yields information about regional function and is valuable in the diagnosis and management of pathophysiological states including pulmonary embolism, myocardial infarction, cerebral stroke and neoplastic disease. Figures from the University of Maryland Hospital reveal that all radiopharmaceutical procedures, whole body surveys of metastatic disease have experienced the largest growth. In 1973, the use of ^{67}Ga-citrate and ^{99m}Tc-Diphosphonate accounted for < 1% and < 2% respectively of all imagining procedures; by 1974, these percentages had increased to 5.5% and 6.8%.

As with conventional radiographic studies, there are certain risks associated with nuclear medicine studies. For the most part, these risks take the form of increased patient radiation dose. The unit of radiation dose is the rem. The average person in the United States receives 0.10 rem per year from natural radiation and 0.08 rem per year from man-made radiation arising primarily from medical use. Thus, the lower limit of radiation exposure in this country is .18 rem per year. The AEC legislates the upper limit of radiation dose at 5 rem per year for those people who work with radiation. Although no level of radiation can be considered as harmless, society has found it acceptable to live within the limits of .18 to 5 rem per year. The radiation doses accompanying the various radiopharmaceutical procedures are also included in Table 1 and indicate that the whole body radiation dose for a radiopharmaceutical procedure is only a fraction of any individual's yearly background dose and does not approach the maximum value of 5 rem per year.

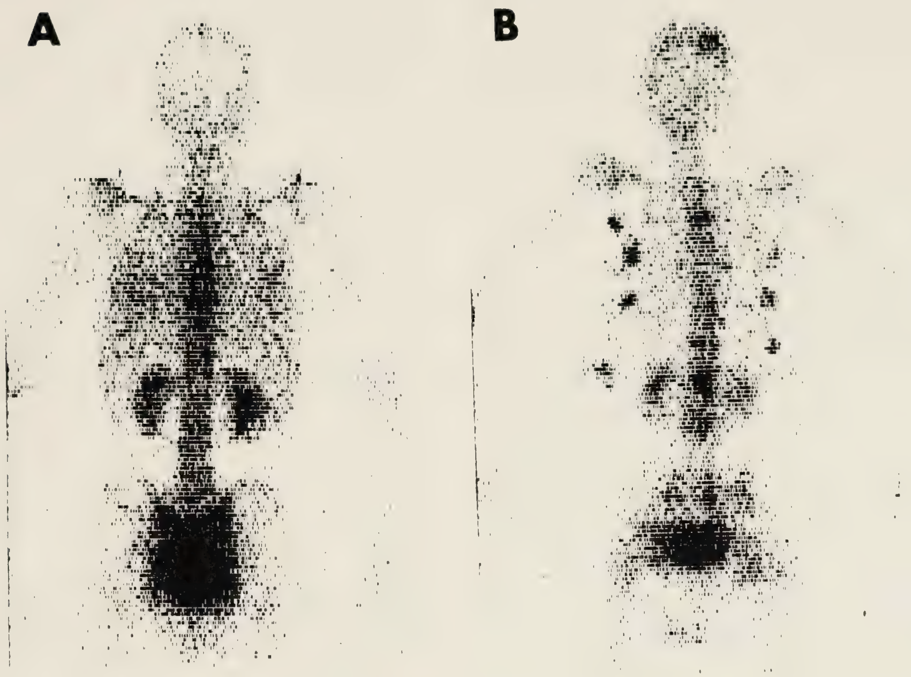

Figure 1. Bone scans of two patients taken 3 hours after the IV injection of 15 mCi. of Tc-99m Diphosphonate.

Table 1

STUDY	RADIOPHARMACEUTICAL	RADIATION DOSE (REM)	DIAGNOSTIC UTILITY
Brain scan	Tc-99m Pertechnetate	.2	Localization of intracerebral space occupying disease (neoplasm, abscess, etc.)
Lung scan	Tc-99m Macroaggregated Albumin	.01	Diagnosis and management of pulmonary embolism
Bone scan	Tc-99m Diphosphonate	.15	Detection of metastatic bone disease
Liver scan	Tc-99m Sulfur Colloid	.008-.02	Evaluation of liver size and detection of metastatic disease
Gallium scan	Ga-67 Citrate	0.5-0.7	Detection of non-osseous neoplasms
Thyroid scan	I-131 Iodide or	.2	Evaluation of thyroid size, position and function
	Tc-99m Pertechnetate	.01	

This rather simplified view of radiation dosimetry is helpful in understanding the relative magnitude of radiation risks. However, there are many additional factors which complicate the picture. One such factor is the rate at which the radiation dose is delivered. Whereas the background radiation dose of .18 rem is received by the patient over the course of a year, the radiation dose accruing from the radiopharmaceutical is delivered over the course of a few hours. In addition, certain organs in which the radio pharmaceuticals locate may receive radiation doses that are ten times larger than the whole body dose. The whole body radiation dose from a ^{99m}Tc-Sulfur Colloid scan is a maximum of .08 rem while the radiation dose to the liver is 1.6 rem. However, if one weighs the risks associated with radiopharmaceutical administration against the risks concomitant with the lack of diagnostic information on many occasions, the lack of accurate diagnostic information presents a far greater risk.

The emphasis on minimizing the patient's radiation dose has led to the use of radiopharmaceuticals which contain short-lived radioactive atoms. Table 2 contains a comparison of two radiopharmaceuticals, Tc-99m Sulfur Colloid and Au-198 Colloid, both of which are used to obtain functional images of the liver. The table shows that both drugs are concentrated in the liver to an approximately equal extent and are retained within the liver for long periods of time. The major difference in the two radiopharmaceuticals is that Tc-99m has a six hour physical half-life and decays exclusively by gamma emission, whereas Au-198 has a 2.7 physical half-life and decays with the emission of both gamma and beta rays. In the case of Tc-99m Sulfur Colloid, the radiopharmaceutical is injected IV and the in vivo liver image taken within ½ hour while most of the radioactivity is localized within the liver. Due to the short physical half-life of Tc-99m, the radioactivity will decay quickly, confining the majority of the patient's radiation exposure to the day of the test. In contrast, the decay of Au-198 continues to subject the patient to a needless radiation dose days after the clinical study is over. This difference in clinical efficiency is demonstrated by the fact that Tc-99m Sulfur Colloid has a radiation dose per millicurie less than 1/100th that of Au-198 Colloid.

The use of short-lived radiopharmaceuticals presents those interested in radiopharmaceuticals with several problems. For instance, how does one transport, compound, and certify sterile and pyrogen-free such short-lived drugs. The answer to these questions is complicated and involves the essence of the practice of radiopharmacy. In the case of Tc-99m, one purchases and transports its parent molybdenum-99 which is then used to produce Tc-99m in the hospital. The scheme is shown in equation 1

$$^{99}\text{Mo} \xrightarrow{\text{67 hrs.}} {}^{99m}\text{Tc} \xrightarrow{\text{6.0 hrs.}} {}^{99}\text{Tc}$$

The product of its decay, Tc-99m, is separated from molybdenum-99 on a daily basis. This system of radionuclide production is known as a radionuclide generator, and each generator can be used for approximately one week. The radiopharmaceuticals are then rapidly compounded from the Tc-99m using aseptic techniques and component material previously shown to be sterile and apyrogenic. Subsequent to rapid quality control procedures, the radiopharmaceuticals are ready for IV administration. The production and use of these radiopharmaceuticals along with the clinical interpretation of the associated study involves the entire nuclear medicine health team.

The nuclear medicine health team is comprised of physicians, radiation scientists, nuclear medicine technologists and pharmacist, representing the convergence of many scientific disciplines with the goal of solving one particular health related problem. As medical science becomes more sophisticated, such interdisciplinary approaches may well serve as a model for future advances in all fields of medicine. In the instance of nuclear medicine the study is initiated when a physician prescribes a given radiopharmaceutical and concludes with the reading and interpretation of the completed scan. Between these limits lies the work of the radiation scientists who are responsible for the creation of new radiopharmaceuticals and for the design and maintenance of computerized nuclear medicine imaging instrumentation; the nuclear medicine technologists who perform the actual scanning process; and the radiopharmacists who perform the compounding, dispensing, quality control and record keeping for the short-lived radiopharmaceuticals.

The role of the radiopharmacist

The general view of the nuclear medicine team as outlined is characteristic of a large hospital center, where teaching, research, and large patient loads are typical. In these centers, a fulltime radiopharmacist has teaching

Table 2

	Tc-99m Sulfur Colloid	Au-198 Colloid
Target Organ	Liver (90%)	Liver (90%)
Effective Half-Life in the Body	6 Hours	2.7 Days
Time of Diagnostic Measurement	< 1 Hour	< 1 Hour
REMs/mCi	Liver: 0.2-0.4	Liver: 50

and consultatory functions in addition to the duties previously described. In the smaller community hospitals, however, where there are neither training programs nor large patient loads, the duties of the radiopharmacist can be completed with approximately two hours.

Nuclear medicine facilities at these smaller institutions have found it difficult to justify a fulltime radiopharmacist and have reluctantly relegated the compounding and dispensing duties to nuclear medicine technologists working under the supervision of a physician. This system has been shown to work adequately provided that one uses those radiopharmaceuticals that are commercially available and has available a member of the hospital's clinical pharmacy staff to consult on radiopharmaceutical problems.

This system of using nuclear medicine technologists to compound radiopharmaceuticals, although adequate, is rapidly becoming outmoded as radiopharmaceuticals become increasingly more sophisticated. An example of this is the use of radioiodinated autologous fibrinogen. This radiopharmaceutical, developed in a joint effort between the Schools of Pharmacy and Medicine at the University of Maryland, requires the isolation and radiolabelling of the patient's own fibrinogen, a step made necessary owing to the possibility of serum hepatitis transmission between potential fibrinogen donor and patient. Although this radiopharmaceutical has been shown to be of great diagnostic value, particularly in the early diagnosis of renal transplant rejection, its use is limited to those hospitals which have the facilities and personnel to perform several aseptic manipulations. Other examples of this trend towards more sophisticated radiopharmaceuticals include Tc-99m labeled albumin, Co-57 labeled Bleomycin, I-131 labeled streptokinase, and I-131 labeled iodocholesterol.

With this in mind, there has emerged within the last few years a new direction which weds the advantage of the radiopharmacist with the economic realities of nuclear medicine. This new direction is the development of the central radiopharmacy concept. A central radiopharmacy is a pharmacy that compounds radioactive drugs in one location for delivery to many area hospitals. It is licensed by the State Board of Pharmacy and fills radiopharmaceutical prescriptions in a fashion analogous to a more conventional pharmacy.

The advantages of the central radiopharmacy concept are quite numerous. It provides up-to-date radio pharmaceutical services for several area or regional hospitals. It provides a central core of specialized equipment and trained personnel to assure quality control in compounding, sterility and pyrogen testing, and dispensing. It allows for the maintenance of a larger inventory of radiopharmaceuticals than that available to any one hospital and provides some cost savings through reduction in overhead and inventory. And finally, it serves the entire community as a central resource for consultation and research on problems relating to radiopharmaceuticals.

The central radiopharmacy makes it economically feasible for pharmacists to have a large input into the development of nuclear medicine. The field of nuclear medicine which owes much of its rapid growth to its multidisciplinary approach to problem solving may very well receive its next major impetus from the pharmaceutical sciences.

Two Documents Relating To Institutional Pharmacy Practice Available From ASHP

Reprints of the following two documents are available from the American Society of Hospital Pharmacists:

ASHP Guidelines for Institutional Use of Controlled Substances ($0.25 each; 11 or more copies $0.20 each)

ASHP Statement on Hospital Drug Control Systems (single copy free; 2-10 copies, $0.75 each; 11 or more copies, $0.60 each)

Both documents were printed recently in the *American Journal of Hospital Pharmacy* and provide important guidance to institutional pharmacists in their basic drug control responsibilities. Payment must accompany all orders for less than $20; a $3.00 handling fee is charged on all orders for less than $3.00 (with the exception of free items).

The "ASHP Guidelines for Institutional Use of Controlled Substances" was drafted by an ad hoc ASHP committee and has been approved by the ASHP Council on Legal and Public Affairs, the ASHP Board of Directors, the Drug Enforcement Administration and the National Association of Boards of Pharmacy. The purpose of the Guidelines is to provide an interpretation of present legal requirements and to establish acceptable professional responses to the demands of the Controlled Substances Act.

The "ASHP Statement on Hospital Drug Control Systems" is based on the premise that responsibility for institutional drug control centers on the pharmacy. This responsibility includes compounding of parenteral and other sterile admixtures, the dispensing of radiopharmaceuticals, provision of drug information and consultation before, during and after the prescribing process, and the provision of information concerning drugs to patients. The statement was developed by the ASHP Council on Professional Practice and has been approved by the ASHP Board of Directors and the ASHP House of Delegates.

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Historical Perspectives

The following is an article from the Association's archives. Similar articles and items of interest from the history of pharmacy in Maryland will appear from time to time in THE MARYLAND PHARMACIST. *The article by Dr. Noel E. Foss, former dean of the School of Pharmacy, was written for the association's silver anniversary in 1957.*

A History of the School of Pharmacy University of Maryland

By DR. NOEL E. FOSS, *Dean* (1949-1968)
School of Pharmacy, University of Maryland

The need for a school in Maryland where students could be given an adequate program of study in the arts and sciences concerned with pharmacy had been realized by leading pharmacists and physicians throughout the State for many years. It wasn't until 1840 that a move was undertaken for the organization of a school of pharmacy. The Maryland Medical and Chirurgical faculty initiated a meeting with representatives of the Baltimore pharmacists in the home of one of the physicians "with the idea of elevating pharmacy."

At this meeting, attended by three members of the medical faculty and eight pharmacists, a committee of five pharmacists was appointed which undertook all further steps and finally, on July 20, 1840, founded the Maryland College of Pharmacy. In 1841 a Charter was obtained from the General Assembly of Maryland for the Maryland College of Pharmacy. Such men as Thomas G. Mackenzie, George W. Andrews, Robert H. Coleman, B. R. Roberts, David Stewart, H. B. Atkinson, H. W. Balderston, Israel J. Grahame, R. P. Littlefield, J. W. Scott, John Hill, W. S. Reese, W. S. Love, J. J. Meyer, T. E. Brennan, Charles Wiseman and E. Raymond were responsible for this action. The first instructional course began in November 1841 and was completed in approximately three months (February 1842). On June 19, 1842, Alpheus P. Sharp, F. A. Cochrane and William S. Thompson became the first graduates of this new school of pharmacy. At this time neither officers nor lecturers received compensation for their services.

In 1847, due to the death of four members and the change of occupation of seven others, the six active members of the college were compelled to suspend lectures. In 1856, the group was reorganized, thirty-one members being elected. George W. Andrews was elected president; Israel J. Grahame, first vice president, J. W. Barry, second vice president; William S. Thompson, secretary; J. B. Baxley, treasurer; and J. W. Moore, A. P. Sharp and J. Roberts were on the board of examiners.

The first home of the Maryland College of Pharmacy was a single small room on Gay Street in Baltimore and later was moved to a room in the building of the Faculty and Physics of the University of Maryland. The college was again reorganized in 1856 and rooms were rented at Calvert and Water Streets in Baltimore. In 1858 rooms were rented from the Medical and Chirurgical Faculty of Maryland; in 1868 the college moved to 12 West Baltimore Street. By 1876 the college purchased its own facilities, a former public school building which was at first remodeled then followed by a new building in 1886. The latter building was used until the Maryland College of Pharmacy became the Department of Pharmacy of the University of Maryland in 1904. In 1920, the school became the School of Pharmacy of the University of Maryland when the then University of Maryland merged with the Maryland State College. Finally, in 1929, the Maryland State Legislature appropriated funds for the construction of a new pharmacy and dental building at Lombard and Greene Streets in Baltimore. This new building was the realization of a great need for the necessary physical equipment for the proper teaching of the profession of pharmacy in Maryland.

Thomas G. Mackenzie was elected president of the Maryland College of Pharmacy in 1840 and served until 1842. The following have served as presidents of the college: Benjamin R. Roberts (1842-1844); George W. Andrews (1844-1871); J. Brown Baxley (1871-1872); J. Faris Moore (1872-1873); John F. Hancock (1873-1875); Joseph Roberts (1875-1888); Edwin Eareckson (1888-1890); William S. Thompson (1890-1891); Louis Dohme (1891-1896).

Charles Caspari, Jr., was appointed Dean of the Faculty in 1896 and served the college in this capacity until his death in 1917. The subsequent Deans of the school have been: Daniel Base (1917-1918); E. F. Kelley (1918-1926); A. G. DuMez (1926-1948); B. Olive Cole (Acting Dean (1948-1949); and Noel E. Foss.

Graduate instruction was begun in 1928. The first three M. S. degrees were awarded in 1930 and the first two Ph.D. degrees in 1933. Graduates of the University of Maryland, School of Pharmacy, have excelled in many fields and their achievements have enriched the university's name. Many graduates are currently serving as educators in various schools of pharmacy; as leaders in the pharmaceutical industry; and are serving in various capacities in government. Many have risen to influential positions in national and state pharmaceutical organizations, and have become prominent citizens of this state and other states as well as of many foreign countries.

The new School of Pharmacy building was completed in 1958. It houses the departments of pharmacy, pharmacy administration, biological sciences, pharmacognosy and administrative offices.

The Maryland School of Pharmacy has grown dramatically during the past century and a quarter and is recognized as one of the leading colleges of pharmacy in the United States.

U.S.P. Drug Product Problems Report

NO. 10

Published by the U.S.P. Convention, Inc.

Edited by JOSEPH G. VALENTINO, J. D.

CASE STUDIES

(Continued from July)

II. Corrective Actions and Product Improvements

A. *Cap is Source of Contamination*

Black plastic chips were observed in ointment and cream anti-inflammatory dermatological preparations. The pharmacist identified the cap as the source of contamination. This defect was confirmed by the firm and action was instituted by the cap supplier to correct the cap composition which was causing the problem.

B. *Package Insert Error*

Close analysis of a package insert for Tetanus Immune Globulin (Human) by a New Jersey hospital pharmacist called one conmpany's attention to an error. Abbreviations contained in a guide to tetanus prophylaxis in wound management incorrectly referred to the wrong product. The company indicated they appreciated the pharmacist's diligence and would be printing a revised version of the circular following its approval by the Bureau of Biologics of the Food and Drug Administration.

C. *Moth Ball Odor May Be Absorbed by OTC Analgesic Tablets*

A Florida community pharmacist reported a popular analgesic preparation which had the odor of moth balls. The company explained that if the product "is stored for any length of time in close proximity to naphthalene or paradichorobenzene containing products, trace quantities of these odors can permeate the carbon and plastic bottle and be absorbed by the tablets." The company indicated that their pharmacological testing has shown that such absorption did not affect the safety or efficacy of the product.

D. *Labels Difficult to Read*

A unit-dose package of an anti-depressant was reported by a New Hampshire hospital pharmacist as having labels that were difficult to read. The strength was stamped on the crimped edge of the cellophane portion and was not legible. The company acknowledged that the complaint was justified, and stated in a letter to the pharmacist that as a result of his calling this to their attention, future packages of the product will be adjusted to make the product identification substantially more legible.

E. *Firm Agrees to Notify Allergists of Dye Removal*

A Colorado hospital pharmacist reported that the dye in an oral liquid asthma preparation had been changed without notification being sent to retail and hospital pharmacies. The firm wrote back explaining that a dye which caused allergic sensitivity reactions in some asthmatics was removed to improve the product. Learning this, the pharmacist's concern and the concern of other members of the hospital staff arose because "the small sub-population of asthmatics who developed violent asthma following ingestion" of even small amounts of the dye in the old preparation would be unable to determine if they were receiving the "new" or "old" preparation once they left the hospital. They felt that if the revised formulation of the product could be used for this small group of asthmatics, there should be some manner of determining whether any specific bottle contained the new formula or the old. The company first responded that they did not feel the need to notify pharmacists of this seemingly minor change, but after further communication stated that a letter would be mailed to all allergists and pulmonary disease specialists apprising them of the change and that the company will provide a mechanism by which physicians can specify and obtain the dye-free formulation.

F. *Ophthalmic Solution Labeling Problem*

Two reports from hospital pharmacists, one from Maine and the other from Illinois, prompted the manufacturer of a salt solution used in eye surgery to investigate the problem of the printing on the bottle flaking off of the steri-unit creating a chance for particles to get into the open eye. The supplier of the bottles agreed that poor or non-treatment caused the ink to flake away. As a result, they were setting up a revised method of procedure to control the physical movement of the bottle to the silk-screening area, plus warning devices on the treating machine to induce immediate attention in case of malfunction. They will also sample after 24 hours to insure that the ink is remaining on the bottle satisfactorily.

G. *Particulate Matter Found in Potassium Chloride*

A Massachusetts hospital pharmacist reported that he had found gross particulate matter and even an insect in an oral potassium chloride solution. The manufacturer replied that this had been caused by some trouble they had encountered in the bottle cleaning operation during the packaging of the product. Corrective measures had been taken and a new piece of equipment had been purchased to further ensure that this would not occur again.

Remission of Juvenile Diabetes

A functional recovery of the beta cell and unimpaired insulin sensitivity play a vital role in maintaining the clinical remission of juvenile diabetes. Usually, the onset of the illness is rapid in insulin-dependent, ketosis-prone young diabetics and is accompanied by nearly complete failure of beta-cell function. But in one out of five patients, a temporary remission of diabetes occurs shortly after diabetes begins.

John S. Soeldner, M.D., a grantee of the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD), investigated why most patients in remission show substantial insulin responses to glucose and to a physiologic meal, and near-normal responses to administration of exogenous insulin.

Dr. Soeldner studied eight nonobese, ketosis-prone juvenile diabetics in remission who could be managed without insulin, and a control group of nonobese healthy volunteers of the same age range. He assessed the secretory capacity with oral glucose, intravenous glucose, and oral mixed meal tests, and insulin sensitivity with a one hour intravenous insulin test.

Results showed that insulin responses in the affected group were variable and relatively subnormal compared to those in healthy control subjects although definite responses to all three stimuli were noted in the majority of patients. The patients also responded to physiologic doses of intravenous insulin with a normal decrease in blood glucose and plasma free fatty acid levels. This suggests maintenance of *in vivo* insulin sensitivity.

maryland board of pharmacy

Pharmacy Changes

The following are the pharmacy changes for the month of August:

New Pharmacies

Drug Shoppe, Inc., Morton Trugman, President; 4701 Randolph Road, Rockville, Maryland 20852.

Save-A-Lot Drugs, Milton L. Hillman, President; 5485J Harper's Farm Road, Columbia, Maryland 21044.

Family Pharmacy of Hampstead, Inc., Irvin Yospa, President; 4111 Lower Beckleysville Road, Hampstead, Maryland 21074.

J. R. J. Pharmacy, Inc., James B. Boze, President; 2140 West Baltimore Street, Baltimore, Maryland 21215.

Dart Drug Corporation, Crofton, Herbert Haft, President; 1633 Crofton Center, Crofton, Maryland 21113.

Changes of Ownership, Address, Etc.

None

No Longer Operating As Pharmacies

None

DOWN'S SYNDROME—Every pregnant woman wants a healthy baby. But many women do not know that, with increased age, they face an increased risk of bearing a child with a genetic defect such as mongolism, according to the National Institutes of Health. Mongolism, or Down's syndrome, is one of the most common causes of mental retardation.

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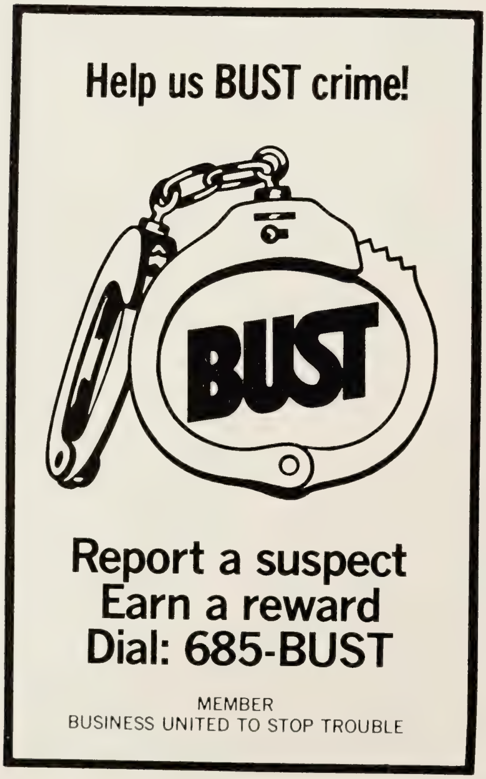
Baltimore Anti-Crime Program Nets 37 Arrests In First Six Months

BUST — an acronym for a new anti-crime program in Baltimore City called Businessmen United to Stop Trouble —has begun a major educational effort in the City's public schools to curb theft and more serious offenses against business in Baltimore.

BUST was organized in February by the business community to work with law enforcement agencies in apprehending individuals committing criminal acts against members. A fund has been established to pay rewards to information leading to the arrest and conviction of persons committing crimes in Baltimore City.

BMPA is represented on the Board of BUST, as an outgrowth of its own reward fund, and has urged all City pharmacists to participate in the program. Membership fees are $25 and $50 a year depending upon the size of the store.

BUST currently has 281 members, representing more than 325 business locations with $11,000 in contributions for program activities. Thirty-seven arrests have been made in which cash rewards were distributed. Further information about BUST is available from the BMPA office.



obituaries

Ernest L. Lagna

Ernest L. Lagna, a retired construction superintendent and former union official, died July 26 at Church Home and Hospital.

A mass of Christian burial for Mr. Lagna, who was 67 and lived at 164 North Potomac street, was offered at St. Elizabeth's Church, Baltimore.

In 1929 he graduated from the University of Maryland School of Pharmacy, but he never practiced that profession, going to work instead as a cement finisher, his father's trade.

He retired in 1971 from the Whiting-Turner Contracting Company but earlier had worked for a number of construction firms. He was a cement finisher by trade.

In 1957 and 1958, he served as president of Local 43 of the Operative Plasterers and Cement Masons International Association.

And, in 1973 and 1974, he taught in the local's pre-apprentice and apprenticeship program for minorities.

A native of Baltimore, he graduated from Calvert Hall in 1926 after playing in the line on the football team and as a member of the baseball and soccer teams.

During the 1930's and 1940's he served as a referee for amateur soccer games and other field sports in East Baltimore.

He is survived by his wife, the former Evelyn Grisinger, a daughter, Mrs. Lorraine Varacalle, of Ellicott City, and four grandchildren.

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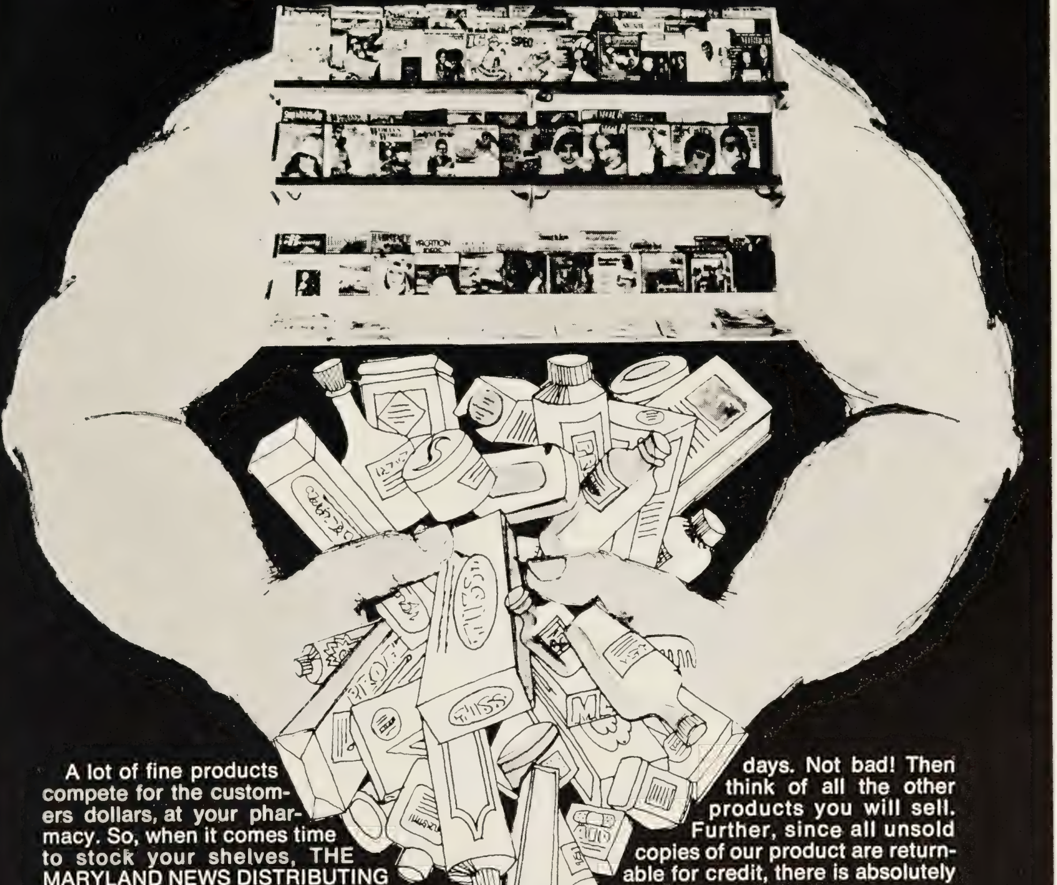

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STANDARDS OF PRACTICE:

What Shall They Be?
Who Shall Make Them?

BOARD OF PHARMACY ANNUAL REPORT 1974-75

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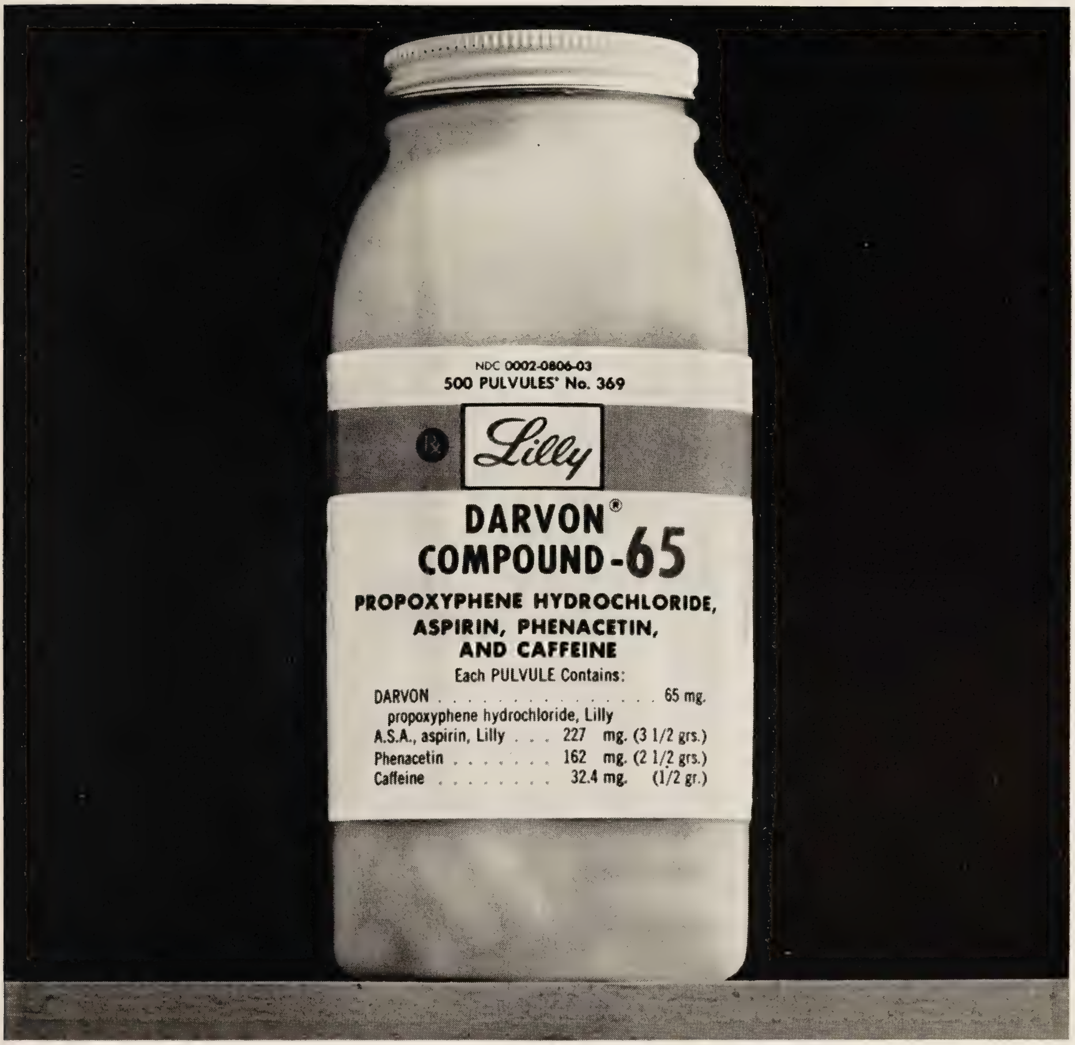
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650 WEST LOMBARD STREET
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TELEPHONE 301/727-0746

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NATHAN I. GRUZ, *Editor*
PETER P. LAMY, PHD., *Institutional Pharmacy Editor*
ROSS P. CAMPBELL, *News Correspondent*
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editorial

STANDARDS OF PRACTICE FOR PHARMACY—What Shall They Be? Who Shall Make Them?

Self determination is one of the critical hallmarks of a profession. Developing proper "Standards of Practice" is an essential element of this process.

The Board of Trustees of the Maryland Pharmaceutical Association has recognized this by establishing a Pharmacy Practices Committee which has been charged with reviewing the practice of pharmacy and determining what constitutes professional duties and responsibilities with the object of recommending the adoption of standards.

An analysis of the components of the pharmacist's role by the MPhA Pharmacy Practices Committee coincides closely with the conclusions of the "Task Force on Roles of the Practitioner of Pharmacy and the Sub-professional in Pharmacy" published in August 1969. The task force was made up of representatives of APhA, ASHP, NABP and AACP.

The MPhA Committee on Pharmacy Practices has recommended the following as professional duties which should and must be carried out expressly and solely by a licensed pharmacist:

1. *Only the pharmacist may certify original prescription order.*

   Certification involves a number of responsibilities such as determination of (1) whether or not it is a legal prescription order, (2) whether or not dose is correct and other matters related to dose, (3) frequency, of prescribing, drug interactions, possible allergies, and incompatabilities, based on medication history of the patient and such medication records as are available.

2. *Only the pharmacist may receive an oral prescription from person authorized to transmit a prescription order. Pharmacist must personally reduce this to writing.*

3. *Only the pharmacist may select the appropriate drug product to be dispensed.*

   Pharmacist is responsible for choosing the proper drug, taking into account known facts of efficacy and price, when choice of brand or "generic" is his. He is responsible for choosing correct strength of correct product.

4. *Only the pharmacist may extemporaneously compound prescriptions for a particular prescription order.*

5. *Only the pharmacist may certify the finished product.*

   In certifying completed prescription medication, he must include (a) confirmation of original certification of prescription order, (b) checking of original labeled container from which medication was withdrawn (c) checking of labels on prescription medication, (d) checking contents of prescription medication container and appearance of total product (e) checking a patient's previous medication records that are available for possible therapeutic incompatibility, and (f) insuring that information on each prescription is added to medication records which the pharmacy keeps. When patient medication profiles are maintained, it is the responsibility of the pharmacist to insure that proper entries are made.

6. *In issuing a prescription to a patient, pharmacist must reasonably assure that patient understands physician instructions and other information appropriate to proper utilization of the drug.*

   Pharmacist must make sure patient knows how and when to use medication, its proper storage and the duration of therapy. The most positive contribution the pharmacist must make toward assuring that optimal effectiveness of a prescribed drug regimen is encompassed is his counseling of patient. This may be done orally, in writing, by use of auxiliary labels, or combination of these methods. If patient does not come in contact with the pharmacist because of delivery service or pick up by other than patient, instructions should be offered in writing or by phone where appropriate.

We believe that adherence to these standards will help assure the delivery of pharmaceutical services of high standards to the public and meet many of the professional objectives of the profession of pharmacy.

— Nathan I. Gruz

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Nathan I. Gruz, *Executive Director*

Warren House
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The meeting was called to order by Chairman Freiman at 10:15 A.M.

COMMUNICATIONS:

- Letter from Delegate Torrey Brown, M.D., stating he wished to reintroduce House Bill 257, the continuing education bill, and requesting Association position or amendments. He was advised that the Maryland Pharmaceutical Association is working with the Tripartite Committee regarding the matter.

- Acknowledgement from Mrs. Samuel Fox in response to letter from Executive Director. Mr. Gruz stated that the Maryland Pharmaceutical Foundation would have to replace Dr. Fox as President.

- Letter from NPIC Board of Governors on a proposal to dissolve NPIC and transfer its assets and activities to APhA. The consensus was to endorse the action.

- Response from Dean Kinnard to MPhA Board action regarding convocation speaker. Dr. Kinnard stated he had also been concerned in view of his request that the talk not be company oriented; however, he believed that different types of pharmacy practice should be presented to students.

- Letter from APhA about National Dental Health Week, February 1-7, 1976.

- APhA announcement of October 1975 as Immunization Action Month.

- Response from Cheeseborough-Ponds to MPhA resolution on Vaseline Hemmor-Aid ointment. The firm did not agree that the product was an unnecessary duplication at greater expense to the consumer.

- Joint statement of APhA and ASHP on PSRO's and pharmacies and Federal Register announcements on PSRO organizations in Maryland.

- Response from Assistant Attorney General John Ruth, Chief of the Consumer Protection Division, to Executive Director's request for reports of activities of the division. He said that he could not comply with the request.

OFFICERS' REPORTS

- President's Report — President Seidman reported on his meeting with Executive Director on a number of occasions at length. Stated his area of concentration and priority would be on membership and more money, additional staff for the office, emphasized need for the Executive Director to concentrate on legislation and for a continuing education bill. Recommended the APhA position on continuing competency based on establishing standards of practice. Other areas were continuing education and bicentennial observance. Met with Finance Committee regarding the budget. Attended the July AACP meeting concerned with enrollments, Pharm.D. degree programs. Spoke of proposals for developing a new Pharmacy Practice Act with the Tripartite Committee with important areas of concern—technicians and various kinds of pharmacy degrees. A conference was held with the Executive Director, President-elect and Chairman of the Board regarding the projections for the year. Also attended the Board of Pharmacy Tripartite Committee meetings and is completing appointment of committees.

- Treasurer's Report — The reports for June, July and August were reviewed and accepted.

- Executive Director's Report — Since the convention and the last Executive Committee meeting following the convention, activities included the following: testimony at Legislative Council hearing in Annapolis on House Bill 832 regarding copay with Messrs. Parker and Rubin. Conference with President Seidman and meeting with President, President-elect and Board Chairman on Association priorities. Attended Board of Pharmacy meetings of July and August and the successful MPhA London trip. Launched the Medication Assistance Program on Psychotropic Drugs jointly with the Mental Hygiene Administration with interview by TV Channel 2. Conferences with Mr. Richard Zeitz of the TIPS Insurance Program. Participated in meeting of the Attorney General's Consumer Advisory Council. Attended funeral of Dr. Samuel Fox, Director of Drug Abuse Administration, Finance Committee, breakfast meeting with Mayor William Donald Schaefer and Bicentennial Committee of the School of

Pharmacy. Visited Fontainebleu and Carousel Hotels in Ocean City with Ron Lubman. Other activities: Special Board of Pharmacy Committee meetings on the posting bill with Consumer Advisory Council, delivered orientation talk to incoming students at the School of Pharmacy, Tripartite Committee's special meeting on proposed medicaid regulations and with the State Department of Health staff on medicaid regulations. Board of Pharmacy has requested proctors from the Maryland Pharmaceutical Association. Spoke to Senator Schweinhaut regarding her interest in the Board of Pharmacy organization. Arranging for pay telephone booth on grounds of Kelly Building. Discussed problems and third-party payment programs such as Associated Prescription Service. Prepared and mailed out the election bulletin for the installation in June 1976.

SPECIAL ORDER OF BUSINESS AND REPORTS:

- Membership Report — There are increases in most categories: owner, non-owner, hospital and particularly in recent graduates.
- Convention Report — Mr. Lubman reported that the convention at the Hilton Inn was successful although attendance was limited. He stated the London Seminar trip was successful and response to the Mexico trip was good. He spoke briefly of the format of the 1976 convention at the Fontainebleu, Ocean City, with Tuesday night reserved for the banquet. The MSHP is planning their convention the weekend just before the beginning of the MPhA convention.
- Legislative — Mr. Parker suggested as the forthcoming agenda: drug product selection, repeal the expiration date, labeling law, continuing education, pharmacist-pharmacist copay regulations, technicians. He favored a pharmacist-in-charge law, mandatory patient profiles, taking of blood pressures, federal SB 1880 by Senator Birch Bayh, making robbery of pharmacies a federal offense and approval of SB 832 with amendments (copay).
- Prescription Insurance Programs — Mr. Rubin — Problems in getting positive responses from PCS were discussed. Announced that legal counsel Kaufman was in contact with Local #355 on freedom of pharmacy issue. The matter of advertising in union newspapers and local newspapers through local associations was brought up. Meeting of MPhA representatives with Medicaid staff on Draft No. 8 was reported on.
- Board of Pharmacy — Mr. Quarles reported on status of the posting bill. List of equipment for pharmacies is being revised. Security guard law where pharmacies are closed while entire establishment is open is being finalized. He stated that Mr. Tregoe will not serve as Secretary after January the 1st.
- Tripartite Committee — Dr. Kinnard reported on work on labeling by Mr. Fedder will be mailed throughout the State. A subcommittee on mandatory continuing education legislation is to come back with recommendations for introduction into 1976 legislature. A subcommittee will serve as an advisory committee on Pharmacy Practices Act revision under Paul Cuzmanes employed by the School as staff coordinator.
- Finance Committee — Mr. Yaffe — The committee recommended the funding of an administrative assistant with BMPA and other local associations to be requested to contribute, recommended $500 for the Frank Balassone Memorial Lecture Fund and approval of the TIPS Insurance Program. On motion of Mr. Yaffe, seconded by Mr. Lichter, TIPS program was endorsed for MPhA solicitation. Passed unanimously.
- The matter of Benylin Expectorant and Benylin Compound formula differences are to be referred to Drug Evaluation Committee.
- The following Committee Chairmen for 1975-76 presented by Mr. Seidman were approved as follows:

Legislative — Richard D. Parker; Professional Affairs — Bernard B. Lachman; Finance — Stanley J. Yaffe; Convention — Ronald Lubman; Public Relations — Charles E. Spigelmire; Prescription Insurance Plans (3rd Party) — Marvin Friedman; Membership — Elwin Alpern; Continuing Education — Dr. Ralph Shagraw; Pharmacy Practices — Melvin N. Rubin; Consumer Affairs — Donald O. Fedder; MPhA Peer Review — Irvin Kamenetz; Drug Evaluation — Dr. Thomas Sisca and Nominating — Paul Freiman.

- Regarding the Fall Regional meeting and the House of Delegates, Speaker Kamenetz requested that a letter go to all local associations regarding delegates and agenda items.

The meeting was adjourned at 2:00 P.M.

New Members

Joel Swartz, Silver Spring
Donald Wenschhof, Sr., Thurmont
Howard Pollack, Randallstown
Harold Cooper, Baltimore
Joseph Rosenberg, Baltimore
Kenneth Richards, Oxon Hill
Donald Rosen, Baltimore
Robert Kantorski, Baltimore
Herbert Schneyer, Baltimore

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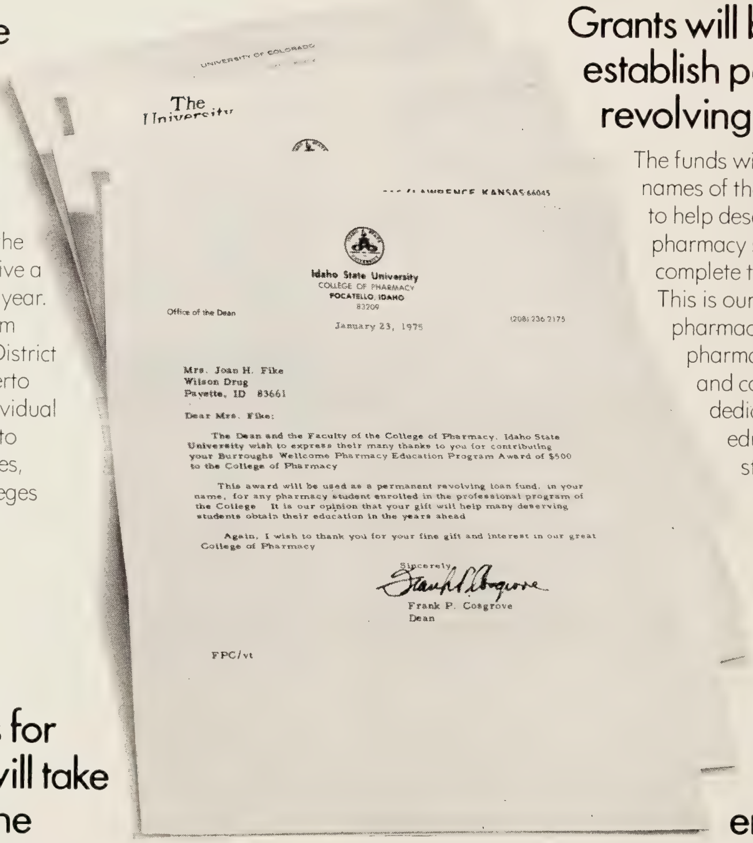
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January 23, 1975

Mrs. Joan H. Fike
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Dear Mrs. Fike:

The Dean and the Faculty of the College of Pharmacy, Idaho State University wish to express their many thanks to you for contributing your Burroughs Wellcome Pharmacy Education Program Award of $500 to the College of Pharmacy

This award will be used as a permanent revolving loan fund, in your name, for any pharmacy student enrolled in the professional program of the College It is our opinion that your gift will help many deserving students obtain their education in the years ahead

Again, I wish to thank you for your fine gift and interest in our great College of Pharmacy

Sincerely,

Frank P. Cosgrove
Dean

FPC/vt

Grants will be used to establish permanent revolving loan funds.

The funds will be in the names of the pharmacists, to help deserving pharmacy students complete their studies. This is our way of joining pharmacists, and future pharmacists, in active and continuing dedication to high educational standards

Drawings for winners will take place at the NARD Convention.

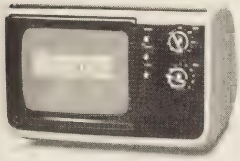
The convention will be held October 12-16, in Miami, Florida. You don't have to be there to be a winner.

Watch your mail for your entry blank

It will arrive soon, along with further details. The response to last year's program was extremely gratifying. This year we're offering twice as many grants, and twice as much award money.

1974 DONATIONS OF EDUCATION PROGRAM

The Burroughs Wellcome Pharmacy Education Program, now in its second year, is one of the newer expressions of our time-honored commitment to service, research, academic endowment and pharmacy education.



Another recent contribution that we're proud of is our weekly "Salute to Pharmacy" commercial during MEDIX, the new medical documentary series appearing on national T.V.

Other B.W. Co. programs for pharmacy include the Burroughs Memorial Fellowship and the Wellcome Memorial Fellowship, granted for field work in pharmacy; the provision of summer employment for undergraduate pharmacy students at our production facilities in Greenville, North Carolina; the distribution of news, important to practicing and student pharmacists, through the periodical *Wellcome Trends in Pharmacy;* and a 24-hour hotline operated by our 37-member Medical Department.

The foundation of our rapport with pharmacists, of course, is our reputation for quality products at reasonable cost backed by pharmacy support, research, and service.

All registered pharmacists throughout the country are eligible to take part in this program, and entrants will receive an attractive Wellcome Tablet Tray.

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Univ. of Georgia

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St. Louis School of Pharmacy

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Idaho State Univ.

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INDICATIONS

Slow-K is indicated for the treatment of potassium depletion in patients with hypokalemia and metabolic alkalosis, and for the treatment of digitalis intoxication. During therapy serum potassium levels should be monitored and the dosage titrated to achieve the desired clinical and laboratory effects.

Slow-K is also indicated for the prevention of potassium depletion when the dietary intake of potassium is inadequate for this purpose. The prophylactic administration of potassium ion may be indicated in patients receiving digitalis and diuretics for the treatment of congestive heart failure, hepatic cirrhosis with ascites, patients with hypertension on long-term diuretic therapy, hyperaldosteronism states with normal renal function, the nephrotic syndrome, and certain diarrheal states.

CONTRAINDICATIONS

Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (*eg*, spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium. Potassium supplementation, when indicated in such patients, should be with a liquid preparation.

WARNINGS

In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (*eg*, spironolactone or triamterene), since the simultaneous administration of these agents can produce severe hyperkalemia.

Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage, or perforation. Slow-K is a wax-matrix tablet formulated to provide a controlled rate of release of potassium chloride and thus to minimize the possibility of a high local concentration of potassium ion near the bowel wall. While the reported frequency of small bowel lesions is much less with wax-matrix tablets (less than one per 100,000 patient-years) than with enteric-coated potassium chloride tablets (40-50 per 100,000 patient-years), a few cases associated with wax-matrix tablets have been reported. These data are from foreign marketing experience. Slow-K should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Hypokalemia in patients with metabolic *acidosis* should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, or potassium acetate.

PRECAUTIONS

The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis *per se* can produce hypokalemia in the absence of a deficit in total body potassium, while acute acidosis *per se* can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis, requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

ADVERSE REACTIONS

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by diluting the preparation further, taking the dose with meals, or reducing the dose.

The most severe adverse effects are hyperkalemia (see Contraindications, Warnings and Overdosage) and gastrointestinal obstruction, bleeding, or perforation (see Warnings).

OVERDOSAGE

The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see Contraindications and Warnings). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-wave, depression of S-T segment, and prolongation of the QT interval). Late manifestations include muscle paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following: (1) elimination of foods and medications containing potassium and of potassium-sparing diuretics; (2) intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10-20 units of insulin per 1,000 ml; (3) correction of acidosis, if present, with intravenous sodium bicarbonate; (4) use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

DOSAGE AND ADMINISTRATION

The usual dietary intake of potassium by the average adult is 40 to 80 mEq per day. Potassium depletion sufficient to cause hypokalemia usually requires the loss of 200 or more mEq of potassium from the total body store.

Dosage must be adjusted to the individual needs of each patient but is typically in the range of 20 mEq per day for the prevention of hypokalemia to 40-100 mEq per day or more for the treatment of potassium depletion.

HOW SUPPLIED

Tablets (pale orange, sugar-coated), each containing 600 mg potassium chloride (equivalent to 8 mEq potassium); bottles of 100 and 1000.

CIBA Pharmaceutical Company
Division of CIBA-GEIGY Corporation
Summit, New Jersey 07901

Rev. 8/74

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CIBA

Annual Report of the Maryland Board of Pharmacy

1974 1975

In compliance with the provisions as set forth in Section 258 of Article 43 of the Annotated Code of Maryland, this report is submitted to the Honorable Marvin Mandel, Governor of Maryland and to the Maryland Pharmaceutical Association. This is the seventy-third report to the Governor of the State and the sixty-third to the Association. The report covers the activities of the Maryland Board of Pharmacy for the fiscal year ending June 30, 1975. This report is also being submitted to the Secretary of Health and Mental Hygiene, the McKeldin Library of the University of Maryland, the Enoch Pratt Free Library, the Department of Legislative Reference, the Hall of Records and the State Library.

Personnel

During the year the Board held seventeen meetings, six of which were held at the School of Pharmacy of the University of Maryland, for the purpose of conducting examinations for registration of pharmacists.

At the meeting of the Board on July 10, 1974, the Board reorganized and elected Mr. Morris R. Yaffe, President, Mr. Charles H. Tregoe, Secretary-Treasurer and Mr. Simon Solomon, Honorary President of the Maryland Board of Pharmacy. The other members of the Board are: Mr. Frank Block, Mr. Ralph T. Quarles and Mr. I. E. Kerpelman.

Examination

The Board conducted two examinations for registration of pharmacists during the fiscal year. They were held at the School of Pharmacy of the University of Maryland on November 6, 7 and 8, 1974 and on June 18, 19 and 20, 1975.

There were eighteen applicants for the full Board in November. Fifteen passed both the theoretical and practical portions of the examination and were subsequently registered. Three failed the examination. Having previously passed the theoretical portion of the examination, twenty-two candidates took the practical examination in November. All of these candidates passed and were subsequently registered. Two applicants took only the theoretical portion of the examination. One applicant passed this portion of the examination and will take the practical examination upon completion of practical experience required. One applicant failed this examination.

In June seventy-eight applicants took the full Board examination. Seventy-five passed both the theoretical and practical portion of the examination and were subsequently registered. Three failed this examination. Having previously passed the theoretical portion of the examination, one applicant took the practical examination which he passed and was subsequently registered. Twenty-seven applicants took only the theoretical portion of the examination as they did not have the required experience to take the full Board. Of these twenty-three passed and four failed this portion of the examination. One applicant took only the practical portion of the examination, as she did not have the required experience for reciprocity and one applicant took only the practical portion of the examination to ascertain competency by the Board. Both of these applicants passed the practical examination and were subsequently registered.

The Standard Examination of the National Association of Boards of Pharmacy was given, which consisted of the following subjects:

Chemistry

Pharmacy

Mathematics

Pharmacology

Practical Pharmacy

The Jurisprudence examination which was compiled by a member of the Board was given as a part of the practical portion of the examination.

Record of Examinations Held

November 6, 7 and 8, 1974

Applicants	Passed	Withheld	Failed
42	37	1	4

June 18, 19 and 20, 1975

Applicants	Passed	Withheld	Failed
106	76	23	7

Total Number Examined for Registration as Pharmacists

Applicants	Passed	Withheld	Failed
148	113	24	11

The following table shows the number of pharmacists who were registered by examination during the past ten years:

Year	*Number of Pharmacists*
1965-1966	64
1966-1967	58
1967-1968	41
1968-1969	60
1969-1970	93
1970-1971	112
1971-1972	133
1972-1973	96
1973-1974	111
1974-1975	113

As in the past many pharmacists applied for reciprocal registration in Maryland in order to accept positions with their employers who are opening stores in Maryland. Those applicants who did not meet our requirements concerning practical experience prior to or after registration were advised that they must take our practical examination in order to verify their qualifications.

In all cases an applicant for reciprocal registration must appear for a personal interview. The entire Board must act on whether or not to grant registration to such applicants, who must sign an agreement to comply with Maryland's laws pertaining to drugs and pharmacy.

The following table shows those granted registration by reciprocity thus far during the 1975 Fiscal Year:

Registered By Reciprocity

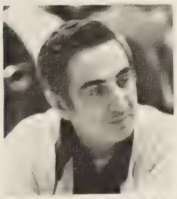
Name	Certificate Number	Dated	State
Michael D. Taksa	7961	July 2, 1974	West Virginia
Brent A. Sharf	7962	July 2, 1974	Virginia
Robert J. Balsis	8036	July 15, 1974	Massachusetts
Robert W. Cornell	8038	July 18, 1974	Pennsylvania
Marvin Levy	8039	July 18, 1974	Dist. of Columbia
David P. Beach	8037	July 15, 1974	New York
Linda A. Newman	8040	Aug. 1, 1974	Kentucky
Hyman Austin	8042	Aug. 8, 1974	New York
MacArthur Brown	8043	Aug. 8, 1974	Texas
Samuel Friedman	8044	Aug. 9, 1974	Louisiana
Dianne T. Tyrance	8045	Aug. 8, 1974	Dist. of Columbia
Lenore T. Ferdinana	8046	Aug. 26, 1974	Dist. of Columbia
William S. Giles, II	8047	Aug. 26, 1974	Illinois
John R. Kelly	8048	Aug. 26, 1974	Dist. of Columbia
Milton S. Moskowitz	8049	Aug. 26, 1974	Dist. of Columbia
Sylvia L. Simrel	8050	Aug. 26, 1974	North Carolina
Barry M. Wikes	8051	Aug. 26, 1974	Pennsylvania
Hugh N. Lunan	8052	Sept. 18, 1974	Dist. of Columbia
Steven J. Berchenko	8053	Oct. 8, 1974	Tennessee
Cletus N. Aguwa	8054	Oct. 16, 1974	Dist. of Columbia
Sharon J. Bolger	8055	Oct. 16, 1974	Massachusetts
Allen L. Gabriel	8056	Oct. 16, 1974	Massachusetts
Barry M. Kob	8057	Oct. 16, 1974	Illinois
Richard B. Miller, Jr.	8058	Oct. 16, 1974	Pennsylvania
Albert Shoumer	8059	Oct. 16, 1974	Illinois
Harold L. Taylor	8060	Oct. 16, 1974	New York
Harry J. Wiest	8061	Oct. 16, 1974	Pennsylvania
Young H. Woo	8062	Oct. 16, 1974	Virginia
Sondra T. Alter	8063	Oct. 30, 1974	New York
Errol D. Daum	8064	Oct. 30, 1974	New York
Mary R. Robling	8097	Dec. 6, 1974	Indiana
David L. Gorham	8098	Dec. 9, 1974	Indiana
Philip B. Kardon	8099	Dec. 9, 1974	Pennsylvania
Silas S. Onuoha	8100	Dec. 9, 1974	Dist. of Columbia
Charles E. Snyder	8101	Dec. 9, 1974	West Virginia
James A. Watson	8102	Dec. 9, 1974	Dist. of Columbia
John T. Welty, Jr.	8103	Dec. 9, 1974	Pennsylvania
Douglas W. Young	8104	Dec. 9, 1974	Delaware
David Epstein	8111	Dec. 12, 1974	New Jersey
David Holovac	8112	Dec. 12, 1974	Ohio
Thomas E. Kissinger	8113	Jan. 1, 1975	Virginia
James L. Gundling	8114	Jan. 7, 1975	Dist. of Columbia
Harry W. Fenster	8115	Jan. 16, 1975	New York
Sharon M. Skeesick	8116	Feb. 6, 1975	Minnesota
Mary E. Bergquist	8117	Feb. 10, 1975	Iowa
Donald L. Diffenderfer	8118	Feb. 20, 1975	West Virginia
Florin Ionescu	8119	Feb. 20, 1975	Arizona
Mary Y. Kang	8120	Feb. 20, 1975	Dist. of Columbia
Thomas H. Wiser	8121	Mar. 5, 1975	Minnesota
Morris D. Zegen	8122	Mar. 5, 1975	Virginia
Maria T. Johnson	8123	Mar. 12, 1975	Missouri
William F. Lester	8124	Mar. 17, 1975	Pennsylvania
Helen O. Anfield	8125	Mar. 26, 1975	Dist. of Columbia
Norman J. Leshan	8126	Mar. 26, 1975	Pennsylvania
David N. LeWinter	8127	Mar. 26, 1975	Pennsylvania
Richard D. Eisenberg	8128	April 3, 1975	Colorado
Richard F. Butler	8129	April 11, 1975	Pennsylvania
Peter P. Lamy	8130	April 11, 1975	Pennsylvania
Anita M. Ehrstein	8131	April 24, 1975	Illinois
Janet L. Hoopes	8132	April 24, 1975	Ohio
Modestine J. Lowery	8133	April 24, 1975	Dist. of Columbia
Suzanne U. Schweitzer	8134	April 24, 1975	Dist. of Columbia
Dennis M. Schechtman	8135	May 9, 1975	New York
Bernard L. Konopko	8136	May 14, 1975	Connecticut
Michael J. Possoby, r.	8137	May 16, 1975	New Jersey
Allan R. Harris	8138	May 19, 1975	Texas
Hyacinth I. Holder	8139	May 19, 1975	Dist. of Columbia
Halcott O. Townsend	8140	May 19, 1975	New York
Edward E. Watkins, Jr.	8141	May 19, 1975	Dist. of Columbia
Ernest A. Carabillo, Jr.	8142	June 18, 1975	New York
Richard M. Cotrupe	8143	June 18, 1975	Virginia
Fyllis J. Etter	8144	June 18, 1975	Pennsylvania
William D. Hanscel	8145	June 18, 1975	Ohio
Zygmunt A. Hoffman	8146	June 18, 1975	Michigan
Stephen A. Scafidi	8147	June 18, 1975	Virginia
Martin P. Schaffer	8148	June 18, 1975	Connecticut

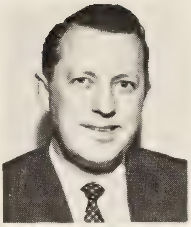
The following table shows the number of pharmacies granted registration by reciprocity and the number who were certified to register by reciprocity in other states during the past ten years.

Fiscal Year	Reciprocity	Certified for Registration in Other States
1965-1966	44	25
1966-1967	61	27
1967-1968	64	20
1968-1969	84	27
1969-1970	75	40
1970-1971	92	26
1971-1972	67	35
1972-1973	94	57
1973-1974	88	63
1974-1975	76	45
Total	745	365

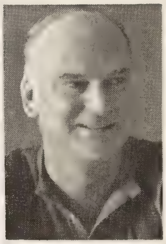
RAY HECKMAN

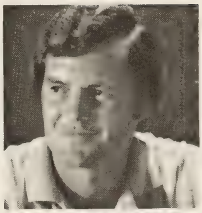
DENNIS CRAWFORD


DEAN SULLIVAN


BILL HYSSONG

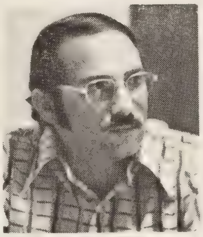
MIKE GERSHEN


JOHN O'MALLEY


GORDON KNIGHT

BOB GITTING

JOE DONOVAN


BOB MUNSEY

JIM RODERICK

"Facings" That Do More Than Sell

Your SK&F Representative stands ready to help you in any way with anything to do with SK&F. If you have a question or a problem, just ask.

Smith Kline & French Laboratories
Division of SmithKline Corporation
SK&F

The table shows Maryland gained 380 pharmacists by reciprocity during the past ten years.

Pharmacy Permits

Location	1973-1974	1974-1975
Counties:		
Allegany	24	26
Anne Arundel	50	54
Baltimore	146	152
Calvert	2	3
Caroline	3	3
Carroll	14	15
Cecil	7	8
Charles	7	8
Dorchester	4	5
Frederick	17	16
Garrett	4	5
Harford	25	26
Howard	14	15
Kent	3	4
Montgomery	98	100
Prince George's	104	105
Queen Anne's	4	4
Saint Mary's	5	6
Somerset	4	4
Talbot	7	7
Washington	17	19
Wicomico	12	13
Worcester	9	9
County Totals	580	607
Baltimore City	201	189
State-wide Totals	781	796

The above figures include permits issued to hospitals in the counties as follows:

Allegany	2	Harford	2
Anne Arundel	3	Howard	2
Baltimore	8	Kent	1
Calvert	1	Montgomery	6
Carroll	3	Prince George's	3
Cecil	1	St. Mary's	1
Dorchester	1	Somerset	1
Frederick	1	Talbot	1
Garrett	1	Wicomico	2
		Total	40

In Baltimore City, 18 hospitals received a permit to operate a pharmacy. Thus, a total of 58 hospitals have a licensed pharmacy. Six nursing homes and one State Penal Institution have received pharmacy permits.

From July 1, 1974 to the present time permits have been issued to 44 new pharmacies. A total of 25 pharmacies have closed and have not, as yet, been re-opened as pharmacies.

The following table shows the number of pharmacies opened, changes in ownership and closed during the year:

	Opened	Changes in Ownership Corporation, and/or Address	Closed
Counties	40	12	15
Baltimore City	4	6	10
Total	44	18	25

The following table shows the number of pharmacies opened, changes in ownership, etc. and closed in the past ten years:

Fiscal Year	Opened	Changes	Closed
1965-1966	27	46	44
1966-1967	41	27	25
1967-1968	24	37	35
1968-1969	34	19	51
1969-1970	20	21	19
1970-1971	24	28	40
1971-1972	27	11	21
1972-1973	25	41	29
1973-1974	34	30	21
1974-1975	44	18	25

Certificate of Registration Renewals

The following table shows the renewal periods and the total renewals to date:

Renewal Period	Total Renewals
1961-1962	2,368
1963-1964	2,425
1965-1966	2,663
1967-1968	2,762
1969-1970	2,900
1971-1972	3,084
1973-1974	3,342
1975-1976	3,480

Manufacturers' Permits

Permits to manufacture drugs, medicines, toilet articles, dentifrices or cosmetics during 1975 were issued to 30 firms. An applicant applying for a permit for a newly established company is required to appear before the Board and to furnish all information the Board considers pertinent to the conducting of such operation.

Well absorbed
even when taken immediately after meals

E-Mycin®

erythromycin enteric-coated tablets, Upjohn

250mg

Formulated for quality...
Priced for economy

E-MYCIN TABLETS—250 mg—For Oral Administration (erythromycin enteric-coated tablets, Upjohn) E-Mycin Tablets are specially coated to protect the contents from the inactivating effects of gastric acidity and to permit efficient absorption when administered either immediately after meals or when given between meals on an empty stomach.

Indications:

Staphylococcus aureus: Acute infections of skin and soft tissue of mild to moderate severity. Resistance may develop during treatment.

Diplococcus pneumoniae: Upper respiratory-tract infections (e.g. otitis media, pharyngitis) and lower respiratory-tract infections (e.g., pneumonia) of mild to moderate degree.

Mycoplasma pneumoniae (Eaton agent, PPLO): In the treatment of primary atypical pneumonia, when due to this organism.

See package insert for other indications.

Contraindication: Contraindicated in patients with known hypersensitivity to erythromycin.

Warning: Safety for use in pregnancy has not been established.

Precautions: Erythromycin is principally excreted by the liver. Caution should be exercised in administering the antibiotic to patients with impaired hepatic function. Surgical procedures should be performed when indicated.

Adverse Reactions: The most frequent side effects of erythromycin preparations are gastrointestinal, such as abdominal cramping and discomfort, and are dose-related. Nausea, vomiting, and diarrhea occur infrequently with usual oral doses. During prolonged or repeated therapy there is a possibility of overgrowth of nonsusceptible bacteria or fungi. If such infections occur, the drug should be discontinued and appropriate therapy instituted. Mild allergic reactions such as urticaria and other skin rashes have occurred. Serious allergic reactions, including anaphylaxis, have been reported.

Treatment of overdose: The drug is virtually nontoxic, though some individuals may exhibit gastric intolerance to even therapeutic amounts. Allergic reactions associated with acute overdosage should be handled in the usual manner — that is, by the administration of adrenalin, corticosteroids and antihistamines as indicated and the prompt elimination of unabsorbed drug, in addition to all needed supportive measures.

How supplied: 250 mg — in bottles of 100 and in unit-dose packages of 100 enteric-coated tablets. Caution: Federal law prohibits dispensing without prescription.

For additional product information, consult the package insert or see your Upjohn Representative.

Upjohn

The Upjohn Company, Kalamazoo, Michigan 49001

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Dangerous Drug Distributors' Permits

The Board issued 108 permits to sell, distribute, give or in any way dispose of dangerous drugs during 1975. It is not necessary for a subsidiary or subsidiaries of a company to have a separate permit, as they are covered under the permit held by the parent company.

Legislation

The following legislation which affects the profession of pharmacy either directly or indirectly was enacted by the 1975 Maryland General Assembly and signed into law by Governor Marvin Mandel.

House Bill 13

This bill, under Article 27, Section 277(o), redefines marihuana to mean "all parts of any plant of the Genus Cannabis." Previously, only the parts of Cannabis sativa L. were affected.

Effective date: July 1, 1975

House Bill 258

This bill repealed and re-enacted with amendments Article 43, Section 189B(10) (d) to read as follows:

189B
A drug or device shall be deemed to be misbranded:

(10) (d)

In the case of a prescription drug manufactured after January 1, 1976, if the label affixed to the container fails to show the name of the actual manufacturer of the drug.

Effective date: July 1, 1976

House Bill 260

This bill states that only pharmacists and pharmacy interns may provide to the public certain information concerning drugs and other medicines. Specifically, Article 43 Section 250(c) reads as follows: "In the practice of pharmacy in a pharmacy only a pharmacist or a pharmacy intern acting under the direct supervision of a pharmacist may provide information to the public concerning drugs and medicines and their therapeutic values, potential side effects and uses in the treatment and prevention of diseases."

Effective date: July 1, 1975

House Bill 581

This bill changes the number of days from the date of issuance in which certain prescriptions may be filled. The bill which changes Article 43, Section 254B will read: "No pharmacist may sell or dispense any medications on a prescription presented more than 120 days from the date it was issued by a physician or dentist unless otherwise indicated by the issuing physician or dentist. The physician or dentist shall indicate on the prescription the date of issuance. The pharmacist shall indicate on the prescription label the date on which the prescription was filled."

Effective date: July 1, 1975

House Bill 633

This bill requires that any pharmacist who sells or dispenses any medication by prescription to indicate certain information on the label. The changes involve Article 43, Section 254A. Subsection (1) requires that the name and strength of the medication prescribed be shown on the label unless the prescriber indicates otherwise. This is very similar to the previous requirement. Subsection (2), however, is a new addition and requires that, in addition to subsection (1) and all other information required by law, the following must appear on the prescription label: "The expiration date of the medication, if known, (month, year) and appropriate special handling instructions regarding proper storage."

Effective date: July 1, 1975

House Bill 1006

This bill adds Section 565D to Article 43. Subsection A of this bill reads as follows: "Any person maintaining and operating a hospital, nursing home or related institution may not request or receive any rebate, commission or other consideration from a pharmacy or other provider of drugs, prescriptions or pharmaceutical services." Penalties for violations of this subsection are very severe.

Effective date: July 1, 1975

House Bill 1026

This bill has been referred to as the Prescription Price Posting Bill and has been added to Article 43 of Section 271A. This section defines various terms pertinent to prescription price posting, and directs the Maryland Board of Pharmacy to compile, revise and distribute to each pharmacy in the State by January 1, 1976, and at least yearly after that date, a chart suitable for display of a type, size and style so as to be clearly visible and easily readable at a reasonable distance, which lists the 100 most commonly prescribed prescription drugs, excluding controlled dangerous substances. This chart also shall provide for other information relative to prescription price posting. The bill then requires each pharmacy to complete this chart by designating clearly price information and certain other charges and services which are pertinent to that pharmacy. This chart shall then be displayed in the immediate vicinity of the prescription department in such a manner that it will be easily visible

New

BRETHINE™

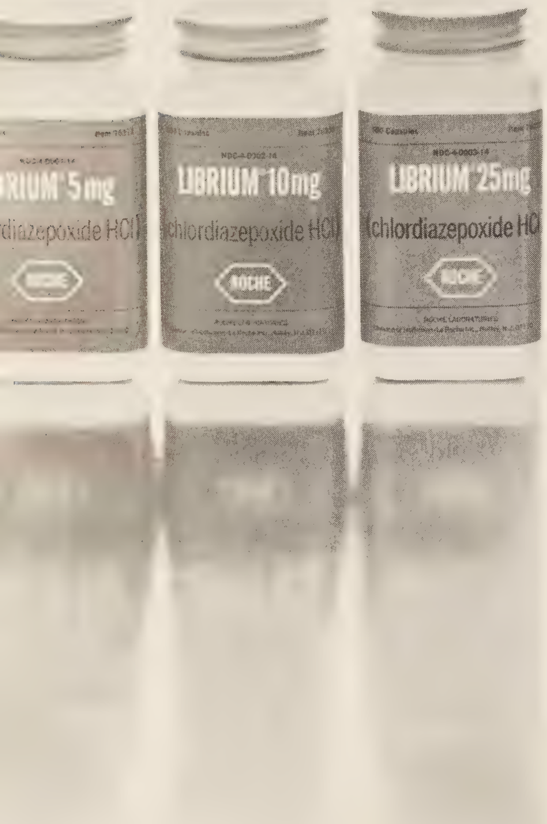
terbutaline sulfate

NDC 0028-0105-01
Brethine™ 5 mg.
brand of
terbutaline sulfate
100 tablets
Geigy
Caution: Federal law prohibits dispensing without prescription.
Geigy

Tablets

SA 10878

LIBRIUM®
(chlordiazepoxide HCl)
FOR ALL THE RIGHT REASONS.



PERFORMANCE. A MATTER OF RECORD

Librium has long been recognized as an effective and safe antianxiety agent. Patients taking Librium seldom experience serious side effects or interference with mental acuity (see summary of product information on following page for additional information). Furthermore, Librium has been used in conjunction with many primary medications.

In dispensing Librium, the pharmacist also benefits. As the originator and developer of Librium, Roche Laboratories offers you ready access to the extensive technical information compiled on this psychotherapeutic agent over the past 15 years. You can also take advantage of the additional complimentary services provided by Roche that are relevant to the interests and problems of your profession.

MEDICAL EMERGENCY LINE

One way Roche provides immediate product information is through the Medical Emergency Line. Roche maintains this direct, 24-hour telephone service (201-235-2355) for specific questions concerning Librium or any other Roche product. For inquiries of lesser urgency, Roche information specialists will supply detailed responses by mail. Of course, your Roche representative is prepared to supply you with a variety of informative materials, such as scientific brochures, reprints and bibliographies related to the pharmacology of Librium (chlordiazepoxide HCl) and its clinical applications.

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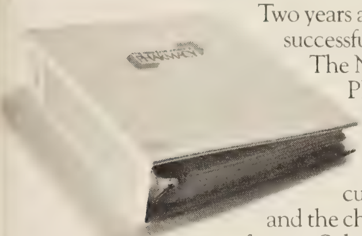
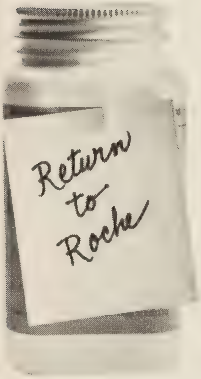
THE NEW ENVIRONMENT OF PHARMACY



Two years ago we initiated a highly successful educational service—The New Environment of Pharmacy. It was designed by pharmacists for pharmacists. The purpose is to keep you informed of current trends in pharmacy and the changing factors affecting your profession. Subjects covered include new government regulations, drug interactions and new concepts and techniques in pharmacy management. If your pharmacy has not already enrolled in this program, write: The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, New Jersey 07110.



LIBERAL RETURN GOODS POLICY

Although the demand for Librium minimizes expiration problems for this product, Roche continues its policy of expediting replacements of all Roche products that may be outdated or discontinued. This liberal policy enables you, as a busy pharmacist, to keep your stock up to date and to maintain a proper inventory.

LIBRIUM®
chlordiazepoxide HCl/Roche®
5 mg, 10 mg, 25 mg capsules

FOR ALL THE PROFESSIONAL REASONS.

Please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states.

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

Supplied: Librium® Capsules containing 5 mg, 10 mg or 25 mg chlordiazepoxide HCl. Libritabs® Tablets containing 5 mg, 10 mg or 25 mg chlordiazepoxide.

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Roche Laboratories
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Nutley, New Jersey 07110

What does man have in common with the Red-Vented Bulbul?

Neither man nor the Red-Vented Bulbul can synthesize vitamin C.

It is a quirk of mother nature that man can neither synthesize vitamin C nor store most of the water soluble vitamins. These nutrients should be replenished continuously to maintain normal tissue levels.

Usually, this is accomplished in our daily diet. But under conditions of illness, stress, in convalescence or following surgery, vitamin stores may be depleted or metabolic demands increased.

This is when Surbex-T may be indicated. Surbex-T restores the water soluble vitamins with each tablet providing 500 mg. of vitamin C plus high potency B-complex.

SURBEX-T®

High Potency B-Complex*
with 500 mg. of Vitamin C

Restores what the body cannot effectively store

*Contains no folic acid.

509115

to customers. The Maryland Board of Pharmacy, after consultation with the Maryland Pharmaceutical Association and the Consumer Council of the Consumer Protection Division of the Office of the Attorney General, shall promulgate rules and regulations in implementation of this bill.

Effective date: July 1, 1975

House Bill 1472

This bill is related to prescribing drugs under the Medicaid Program. This bill authorizes the Department of Health and Mental Hygiene to establish the form and method of application for reimbursement.

Effective date: July 1, 1975

House Bill 1486

The legislation presented by this bill is best described in four different steps:

(1) Article 27, Section 300(i) has been amended from reading — drugs, etc., "called for in a physician's prescription . . ." to read — drugs, etc., "called for in a physician's or other authorized prescriber's prescription except as authorized under Section 273A of Article 43 . . "

(2) A significant change was made in Article 43, Section 42(a). This section of the law concerns itself with Maryland Medical Assistance Prescriptions, and the last paragraph of this Section 42(a) now reads as follows: "Unless the prescriber indicates otherwise on the form or on an attached signed certification of need, it is understood that the generic form of the drug from the State Health Department formulary, or the list prepared according to Federal Regulation 45 CFR Part 19 (Maximum Allowable Cost) will be utilized in filling the prescription."

(3) Section 254A of Article 43 was the section of law which mandated that certain information be listed on the prescription label. Item E of this informational sheet discusses additions to this section by House Bill 633. House Bill 1486 further amends this section particularly in the listing of the name. That sentence now reads: "In listing the established or trade name, the label shall conform to the name used by the practitioner in his prescription, except when under the provisions of Section 273A of this Article, the pharmacist dispenses a drug product different than that ordered by the prescriber, in which case the label must contain the established name of the drug prescribed and the name of the manufacturer or distributor of the drug product dispensed."

(4) Article 43, Section 273A has been commonly referred to as the Maryland Drug Product Selection Law. Sub-section (b) of 273A has been amended to accept Medical Assistance Prescriptions from the provisions of notifying a prescriber in writing should a different product other than that prescribed be selected by the pharmacist. This applies only to Medical Assistance Prescriptions for drugs listed in the State Health Department Formulary. For all other prescription product changes, the transmitting of notice in writing to the prescriber remains mandatory. Effective date: July 1, 1975

Cooperative Activities

The Board maintained membership in the National Association of Boards of Pharmacy. The annual meeting of the Association was held in San Diego, California, May 4-7, 1975. The Board was represented by President Morris R. Yaffe.

The Board also maintained membership in the Conference of Boards and Colleges of Pharmacy of the National Association of Boards of Pharmacy, District Number Two, comprising the states of New York, New Jersey, Pennsylvania, Delaware, Maryland, the District of Columbia, Virginia and West Virginia. The annual meeting was held in Albany, New York on October 24-26, 1974. The Board was represented by President Morris R. Yaffe, Mr. Frank Block and Mr. Ralph Quarles.

The Board maintained cooperative activities with the State Department of Health and Mental Hygiene, the School of Pharmacy - University of Maryland, the Maryland Pharmaceutical Association, the Baltimore Metropolitan Pharmaceutical Association, the Federal Drug Enforcement Administration, the Food and Drug Administration, City, County and State Police.

Finances

All funds of the Board of Pharmacy are deposited to the credit of the Treasurer of the State of Maryland and disbursements covering the expenses of the Board are paid by voucher by the State Comptroller.

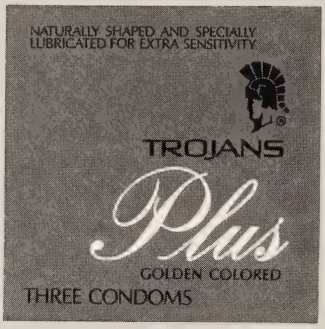
FINANCIAL STATEMENT —
MARYLAND BOARD OF PHARMACY
1975 Fiscal Year

Budgeted	$13,684.00
Budget Credits	162.24
Total Available	13,846.24
Expenditures	13,843.65
Unexpended Balance	2.59
Unliquidated Encumbrances	.00
Unencumbered Balance	$ 2.59

Respectfully submitted,

C. H. TREGOE
Secretary-Treasurer
Maryland Board of Pharmacy

No wonder Trojans are America's number one bestseller


NATURALLY SHAPED AND SPECIALLY LUBRICATED FOR EXTRA SENSITIVITY
TROJANS
Plus
GOLDEN COLORED
THREE CONDOMS

...they're recommended by more pharmacists than all other brands put together.

(according to a 1974 survey by a national drug magazine)

Trojans showed up as the No. 1 condom recommended by pharmacists in the latest survey of a national drug magazine covering one out of every ten drug stores from coast to coast.

And now both pharmacists and consumers have an additional reason to remember and prefer Trojans. We've added a new premium product to the Trojans line. Trojans Plus. They're the ultimate for the intimate. They're tops in sensitivity...golden colored, naturally shaped, and specially lubricated. And they have the unforgettable name...TROJANS PLUS.

Youngs Drug Products Corporation ™
P.O. Box 5, Piscataway, N.J. 08854

institutional pharmacy

The following reports have been reprinted from the Union Memorial Hospital PHARMACY BULLETIN.

Clindamycin (Cleocin) Pseudomembranous Colitis

The use of Clindamycin and Lincomycin oral preparations has produced cases of severe and persistent diarrhea and has at times necessitated discontinuance of the drugs. The diarrhea has been occasionally associated with blood and mucus in the stools and has at times resulted in acute colitis. This warning statement is included in the produce brochure supplied by the manufacturer.

In one case[1], a thirty-four year old woman developed an unexplained fever following a repeat renal biopsy. Because bacterial infection was suspected, she was given Clindamycin and Cephalexin for eight days. The woman developed increasingly severe diarrhea, with abdominal pain, distension and tenderness four days after stopping the treatment. Plaques with typical features of pseudomembranous colitis showed on sigmoidoscopic examination. The colon became more dilated, corticosteroids were increased and the patient gradually improved. Only minor abnormalities of the mucosa showed one month later with barium enema and colonoscopy.

Another report[2] describes three case studies involving fulminant colitis following Lincomycin or Clindamycin therapy. All three presented with the clinical picture of severe diarrhea, abdominal pain, and low grade fever; one experienced symptoms on the fourth day, one on the fifth day of therapy and the third developed the symptoms three days following a five-day treatment plan. Each of the three patients showed changes in x-ray. All three responded to conservative treatment such as Salicylazosulfapyridine (AZULFIDINE), antispasmodics, and steroid enemas and have since remained asymptomatic.

References:

1. J. G. P. Sissons, *et al., Lancet, 1*:172 (Feb. 2) 1974.
2. Manashil and Kern, *Amer. J. Gastroenterol., 60*:394-399 (Oct.) 1973.
3. *Drug Intelligence and Clin. Pharm., 18* (3):146 (Mar.) 1974.
4. *Clin-Alert, 50* (Mar. 26) 1974.

Antiarrhythmic Drugs — More Interactions

The April, 1974 issue of the Bulletin presented a partial list of antiarrhythmic drugs which interact with other drugs and ions which act on membranes. Listed here are several additional drugs which might be expected to interact.

Diphenylhydantoin (DILANTIN), when used chronically, significantly accelerates metabolism of certain drugs by the liver. When anticoagulants are used in such patients, this has special clinical significance. However, administration of large doses of Diphenylhydantoin parenter ally has been reported to displace Coumarin anticoagulants from protein binding sites, resulting in a sudden increase in anticoagulant effect. Isoniazid (INH) has been reported to interfere with normal hepatic metabolism of Diphenylhydantoin. Patients receiving tuberculostatic doses of INH should thus be considered unusually sensitive to this antiarrhythmic agent.

All of the antiarrhythmic agents, including Lidocaine (XYLOCAINE), have two interactions in common. First, their depressant effects on the mechanical and electrical properties of the heart are greatly augmented in the presence of high serum potassium concentrations (greater than 5 milliequivalents per liter). Second, all of these agents are capable of augmenting the paralyzing effect of neuromuscular blocking drugs such as d-Tubocurarine and succinylcholine. In patients who are recovering from neuromuscular blockade in the recovery room, large doses of parenteral antiarrhythmic agents should be used with caution.

Ref: Hansten P.D.; DRUG INTERACTIONS, ed. 2; Lea and Febiger, 1973
Katzung, B., Therapeutics, vol. 2, No. 3, 1974

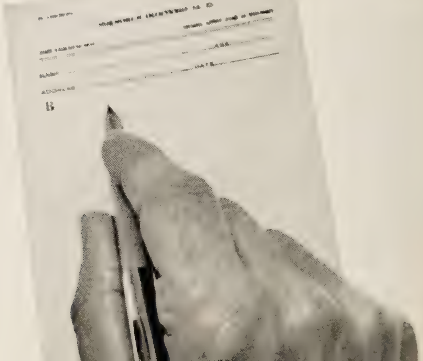
Caffeine Content of Beverages

The Caffeine content of prepared coffee or tea will vary, depending upon the ratio of coffee or tea to water, the brewing method, and the blend of coffee or tea used. Since Caffeine is soluble in hot water, the longer the coffee or tea is exposed to the hot water, the more Caffeine will be extracted. Therefore the drip and vacuum methods yield coffee containing the least Caffeine with percolating and boiling methods yielding more Caffeine.

Caffeine is a central nervous system stimulant with a usual dose of 200mg. An eight ounce cup of perked or boiled coffee will contain approximately 192mg. of Caffeine. Instant coffee contains 3.2 to 4.0% (32 to 40 mg. per gram of coffee) Caffeine. Decaffeinated coffee has been estimated to contain about 5mg. Caffeine per eight ounce cup. Tea beverages have approximately one-half the Caffeine content of coffee (96 to 120mg per eight ounce serving of tea). The usual Caffeine content of cola drinks is 30mg. per eight ounce serving.

(Continued on Page 28)

Bioequivalence



the weight of scientific opinion:

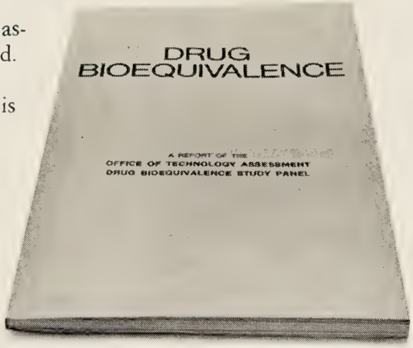
Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."


DRUG
BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:

(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

P·M·A

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

protecting the integrity of the Rx's you dispense

(Continued from Page 25)

As is the case with most substances (food, drug or chemical), Caffeine consumed in moderation and within prescribed limits is not harmful or dangerous. However, consideration need be given to the ingestion of the above beverages in conjunction with one another or with other Caffeine-containing products (Aspirin Compound, Propoxyphene-DARVON-Compound, etc.)

Ref: JAMA: 229-3:337

Photosensitivity-Drug Induced (Revisited)

Drug photosensitivity may be defiined as adverse reactions manifested by the skin as a result of combined exposure to certain drugs, chemicals, or foods with sunlight. *Phototoxic drug reactions* are those which can be elicited in almost everyone under the proper conditions. This reaction is characterized by an exaggerated sunburn with or without painful edema. The reaction occurs five to eighteen hours after exposure to the sun. *Photoallergic drug reactions* can be considered to be an acquired and altered capacity of the skin to respond to light energy in the presence of a photosensitizer. These are presumed to be dependent upon antigen-antibody relationship or a cell-mediated delayed hypersensitivity response. The clinical manifestations of a photallergic response may range from eczematous or papular lesions, appearing 24 or more hours after sun exposure, to acute urticarial lesions developing within a few minutes after exposure. *Photoaugmented drug reactions* occur when ultraviolet light potentiates the reactivity of the skin by means of a direct effect on cellular components that make them more vulnerable to contact dermatitis.

Therapy of acute phototoxic reactions induced by either topical or systemic agents is best achieved by removal of the offending agent and avoidance of exposure to the sun. Usual dermatological procedures for reducing inflammation may be undertaken. Patients who cannot discontinue their medication should be advised to limit exposure to direct sunlight to before 10 a.m. and after 4 p.m. Within a week after discontinuation of sun and drug the problem generally subsides.

Patients sensitized by exogenous agents (particularly halogenated salicylamides and certain antifungal drugs) occasionally become persistent reactors to light and may remain sensitive to the sun for months after cessation of detectable exposure to the photosensitizing drug. Even minimum exposure through window glass of less than thirty minutes duration or exposure to overhead fluorescent light can induce severe eczematoid reactions.

Application to the skin of a sunscreen or an agent that will scatter, absorb or reflect offending wave lengths of light. Many commercial products with Para-aminobenzoic acid (PABA), in varying concentrations, or derivatives are used as sunscreening agents, primarily for melanin stimulation and not for protection from photosensitivity reactions.

To best protect oneself from photosensitivity reactions what is needed is an ultraviolet and visible light-absorbing chemical that adheres to the skin and is not easily removed by sweating, swimming, or contact with clothing. Patients should be advised to reapply the substance after excessive sweating or immersion in the water. The PABA, 5% in alcoholic solution, is ideal when the skin has no eruptions or erythematous reaction and prolonged protection is desirable for avoiding the recurrence of photosensitivity reactions.

There are systemic and contact photosensitizers. Systemic sensitizers include the Tetracycline antibiotics (some with lesser tendency than others to cause reactions); Phenothiazines such as Chlorpromazine (THORAZINE), Promethazine (PHENERGAN), Promazine (SPARINE), Trifluoperazine (STELAZINE), etc.; Griseofulvin; oral contraceptives; Sulfonamides such as Sulfisoxazole (GANTRISIN), etc.; Thiazide diuretics such as Chlorothiazide (DIURIL), Hydrochlorothiazide (HYDRODIURIL, ESIDRIX, ORETIC); Chlordiazepoxide (LIBRIUM), just to name a few. Contact sensitizers include hexachlorophene, halogenated salicylamides (deodorant bacteriostatic agents in soaps), essential oils (bergamot, lime, cedar, lavender, citron sandalwood), cosmetic dyes, coal tar derivatives used in the treatment of psoriasis and chronic eczema, 5-Fluorouracil, an antineoplastic agent and many others. A paradoxical reaction occurs with lower concentration solutions of PABA producing photallergic reactions in contrast to the higher concentration (5%) solutions of PABA being effective sunscreening agents.

In addition to the above described photallergic and phototoxic reactions the following may result from systemic or contact sensitizers and exposure to the sun: burning sensation, itching, acceleration of inflammatory process, marked erythema, vessicles, bullae, hyperpigmentation, hives, etc. Cross photosensitization is a common occurrence.

Ref: 1. Stempel, E. and Stempel, R.—"Drug-Induced Photosensitivity," JAPhA 13:4 (April) 1973

2. Adverse Drug Reactions—HAZARDS OF MEDICATION, first edition p 349-350

3. Silverman, H. M.; Hosp. Formulary Manag., p 31, 32, 45, (May) 1974

NOTE: Heretofore unexplained and unsuspected reactions are now more readily identified and more easily treated with the benefit to risk ratio as a guide to rational therapy.

calendar

1976

February 8 (Sunday) BMPA Annual Banquet and Dance—Blue Crest, Pikesville
(Start making up a table of friends)

April 3-8 APhA Annual Convention, New Orleans

June 18-20 MSHP Annual Seminar, Sheraton Fontainebleau, Ocean City, Md.

June 20-23 MPhA Annual Convention, Sheraton Fontainebleau, Ocean City Md.

DIABETES—A complicated disease for which there is no known cure, diabetes ranks seventh on the list of diseases causing death in the United States, according to the National Institutes of Health.

Sustaining Members Maryland Pharmaceutical Association

BORDEN-HENDLER COMPANY
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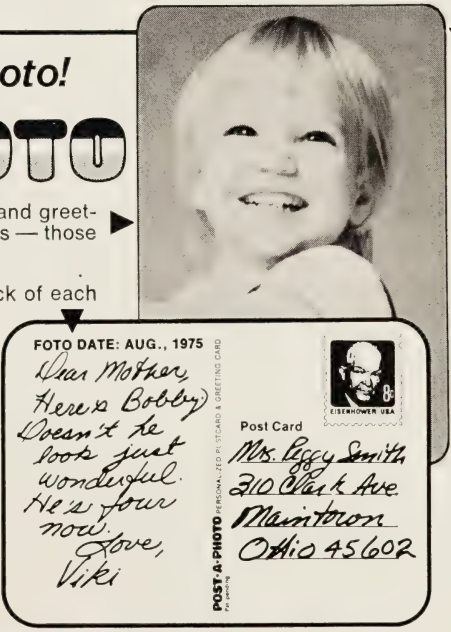


FOTO DATE: AUG., 1975

Dear Mother,
Here's Bobby!
Doesn't he
look just
wonderful.
He's four
now.
Love,
Viki

Post Card

Mrs. Peggy Smith
310 Clark Ave.
Maintown
Ohio 45602

This outstanding package

100 Tablets
Item 73314
NDC-4-0009-01
GANTRISIN®
preparation of
sulfisoxazole
Each tablet contains
0.5 Gm sulfisoxazole.
ROCHE
ROCHE LABORATORIES
Division of Hoffmann - La Roche Inc.
Nutley, New Jersey 07110

includes this outstanding package.

Gantrisin® is the antibacterial that ushered in a new era of sulfonamide therapy coupling effectiveness and relative safety. As its originator and developer, Roche has accumulated, through more than 25 years of clinical use, a vast amount of experience with this "classic" urinary antibacterial. *And available to you is this mine of technical information.*

Medical Emergency Line

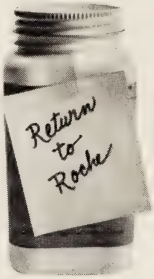
Area Code 201
235-2355

For questions requiring an immediate answer, our Medical Emergency Line (201-235-2355) provides a direct, 'round-the-clock telephone service for specific questions on Gantrisin and other Roche products. In addition, our information specialists are prepared to answer inquiries of lesser urgency by mail. Through your Roche representative, you can also obtain a variety of informative materials, *e.g.*, scientific brochures, reprints and bibliographies.

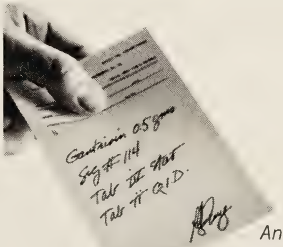
The New Environment of Pharmacy

To keep you informed about current trends in pharmacy and changing factors governing the profession, Roche has initiated a new educational service designed *by* pharmacists *for* pharmacists. This ongoing professional resource, *The New Environment of Pharmacy*, will keep you continuously informed on a wide range of pertinent subjects—new government regulations, drug interactions, concepts and techniques in pharmacy management, etc. If your pharmacy has not already enrolled in this program, just write to The New Environment of Pharmacy, Roche Laboratories, Division of Hoffmann-La Roche Inc., P.O. Box 283, Nutley, New Jersey 07110.

Liberal Return Goods Policy



Roche understands the difficulties that a busy pharmacist has in maintaining a proper inventory. Prescription demand for Gantrisin tends to minimize any expiration problems for this product. For other Roche products that may be outdated or discontinued, the Roche return goods policy expedites replacement and enables you to keep your stock up to date.



And the Roche commitment to product excellence is your assurance of uniformly high quality.

Gantrisin®

sulfisoxazole/Roche®

0.5-Gm tablets. Raspberry-flavored suspension, chocolate-flavored syrup also available.

Please consult complete product information, a summary of which follows:

Indications: Nonobstructed urinary tract infections (mainly cystitis, pyelitis, pyelonephritis) due to susceptible organisms. **IMPORTANT NOTE: *In vitro* sensitivity tests not always reliable; must be coordinated with bacteriological and clinical response. Add aminobenzoic acid to follow-up culture media. Increasing frequency of resistant organisms limits usefulness of antibacterial agents, especially in chronic and recurrent urinary infections.** Maximum safe total sulfonamide blood levels, 20 mg/100 ml; measure levels as variations may occur.

Contraindications: Hypersensitivity to sulfonamides; infants less than 2 months of age; pregnancy at term and during the nursing period.

Warnings: Safety in pregnancy not established. Do not use for group A beta-hemolytic streptococcal infections, as sequelae (rheumatic fever, glomerulonephritis) are not prevented. Deaths reported from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias. Sore throat, fever, pallor, purpura or jaundice may be early indications of serious blood disorders. CBC and urinalysis with careful microscopic examination should be performed frequently.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy or bronchial asthma. Hemolysis, frequently dose-related, may occur in glucose-6-phosphate dehydrogenase-deficient patients. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias:* Agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia; *Allergic reactions:* Erythema multiforme (Stevens-Johnson syndrome), generalized skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis; *Gastrointestinal reactions:* Nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis; *C.N.S. reactions:* Headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia; *Miscellaneous reactions:* Drug fever, chills and toxic nephrosis with oliguria and anuria. Periarteritis nodosa and L.E. phenomenon have occurred. Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Supplied: Tablets containing 0.5 Gm sulfisoxazole; pediatric suspension and syrup containing, in each teaspoonful (5 ml), the equivalent of 0.5 Gm sulfisoxazole in the form of acetyl sulfisoxazole.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110

maryland board of pharmacy

Pharmacy Changes

The following are the pharmacy changes for the month of September:

New Pharmacies

Cape Drugs, Bennie G. Owens, President; 1366 Cape Saint Clair Road, Annapolis, Maryland 21401.

Changes of Ownership, Address, Etc.

Capitol Heights Pharmacy, Inc., Mayer N. Freed, President; (Change of address—6044 Central Avenue), 119 Capitol Heights Boulevard, Capitol Heights, Maryland 20027.

State Drug, Daniel Freedman, President; (Change of pharmacy name—Blatt Drugs, and owner—Shirley Blatt), 7000 Eastern Boulevard, Baltimore, Maryland 21224.

Clinton Pharmacy, Robert S. Bergstein, President; (Change of address—9012 Old Branch Avenue), 8906 Simpson Lane, Clinton, Maryland 20735.

No Longer Operating As Pharmacies

Howard Park Pharmacy, Sidney Zerwitz, President; 5114 Liberty Heights Avenue, Baltimore, Maryland 21207.

CHANGE OF ADDRESS

When you move—

Please inform this office four weeks in advance to avoid undelivered issues.

"The Maryland Pharmacist" is not forwarded by the Post Office when you move.

To insure delivery of "The Maryland Pharmacist" and all mail, kindly notify the office when you plan to move and state the effective date. APhA members—please include APhA number.

Thank you for your cooperation.

Nathan I. Gruz, Editor
Maryland Pharmacist
650 West Lombard Street
Baltimore, Maryland 21201

ANNOUNCING

CALVERT'S

RETAIL CUSTOMER SERVICES

program

CALVERT'S CONTROLS PROGRAMMED PROTECT PERCENTAGE PROFIT

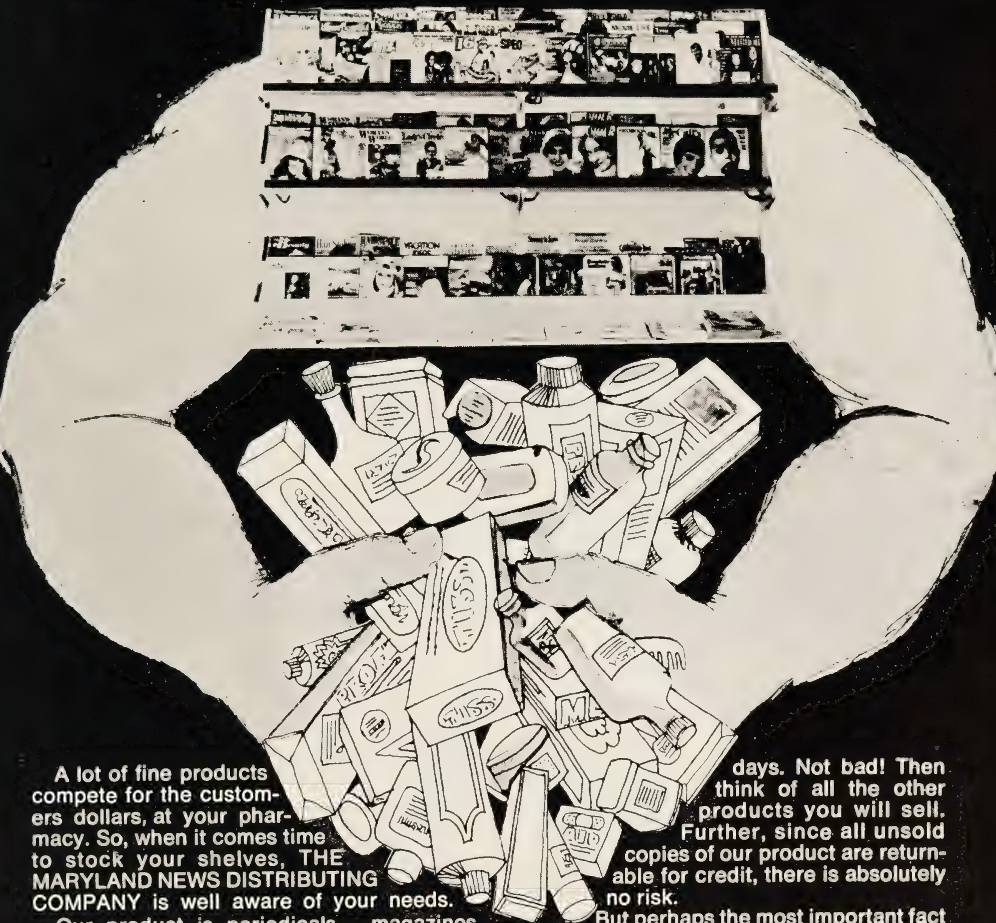
Calvert's CPP is not just another source of price stickers. Rather, it is a computerized program to guarantee gross profits while allowing you the flexibility of selecting your own gross margins.

MANY ADDITIONAL ENHANCEMENTS

INTERESTED PARTIES, PLEASE CONTACT JOE HUGG — 467-2780

CALVERT DRUG COMPANY
901 Curtain Ave.
Baltimore, Md. 21218

Help Yourshelf...



A lot of fine products compete for the customers dollars, at your pharmacy. So, when it comes time to stock your shelves, THE MARYLAND NEWS DISTRIBUTING COMPANY is well aware of your needs.

Our product is periodicals — magazines and paperback books — and we continually supply your racks with a variety of current reading material appealing to every taste and keeping your customer reader interest at its highest.

We understand that turnover is important. With periodicals you have a sufficient *new* product each month to stimulate traffic not only for our product, but for *all* the products in your store.

An investment of $100 in periodicals, normally will result in $127 of sales within 30 days. Not bad! Then think of all the other products you will sell. Further, since all unsold copies of our product are returnable for credit, there is absolutely no risk.

But perhaps the most important fact is that periodicals have an unselfish way of helping to sell every other product in your store. Take a look at the pages of our magazines and see how they showcase just about every other product that you sell over and over again. It is like having a built-in salesman.

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The Maryland News Distributing Co.
(301) 233-4545
Ask about periodicals, the unselfish product.

LAMPA News

The 22nd annual convention meeting was held at the Baltimore Hilton Inn, Pikesville, Maryland, Wednesday, June 25, 1975 with Mrs. Anthony G. Padussis presiding.

The annual committee reports reflected gains in membership, a stable treasury and interesting and innovative programs.

LAMPA bestowed its first "Life Membership" upon Mrs. Andrew G. DuMez, who is now living in retirement in Rochester, Minnesota. She is the wife of a former Dean of the Pharmacy School of the University of Maryland, and a long time member and supporter of LAMPA.

It was reported that LAMPA members, Mrs. Bernard Levin and Mrs. Sol Weiner, have made significant contributions to volunteer hospital activities in Baltimore. Jean Levin leads all volunteers in hours contributed at St. Agnes Hospital with over 10,000 hours and Rose Weiner, working at Sinai Hospital, has completed more than 5,000 hours.

Mrs. Paul Freiman, delegate to the American Pharmaceutical Association Convention reported on the Ladies Auxiliary meeting in San Francisco.

It was announced that LAMPA would hold a Dinner Cruise on the Chesapeake.

Mrs. Frank Block, who has diligently cared for the LAMPA "history book" presented the book at the meeting. Mrs. Mary Padussis and Mrs. Mary Frangakis gave a cooking lesson, making the Greek pastry, baklava.

Before adjourning for lunch, door prizes were distributed. Each member received a jar of imported Greek olives in recognition of the meeting's theme — Greece.

Officers and Board
1975-76

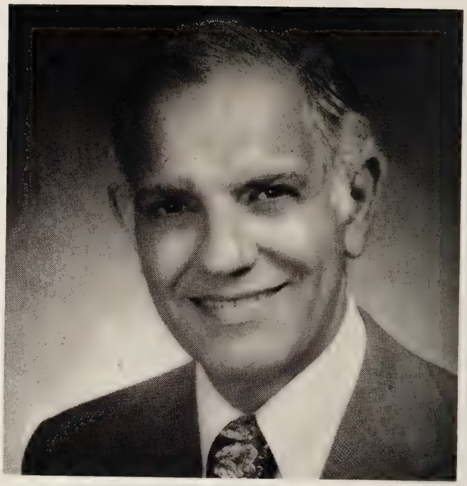
Officers

President, Mrs. Anthony G. Padussis; Communications Secretary, Mrs. Richard R. Crane; Recording Secretary, Mrs. S. Ben Friedman; Treasurer, Mrs. Harry L. Schrader; and Membership Treasurer, Mrs. Sol Weiner.

Board of Directors

Mrs. Frank Block, Mrs. William J. Connor, Mrs. Joseph Dorsch, Mrs. Morris Cooper, Mrs. Joseph Hugg, Mrs. Douglas Kaden, Mrs. Nicholas Lykos, Mrs. Bernard Levin, Mrs. Kenneth Mills, Mrs. Louis Rockman, Mrs. Nathan Schwartz, Mrs. Charles Spigelmire, and Mrs. David Weiner.

Anthony Padussis of Baltimore Wins Robins Co. Award



ANTHONY PADUSSIS

Baltimore pharmacist Anthony G. Padussis has been named recipient of the Maryland Pharmaceutical Association's 1975 "Bowl of Hygeia" award sponsored by the A. H. Robins Company. Mr. Padussis joins award-winning pharmacists from the United States and Canada who have been honored for outstanding community service by a pharmacist.

The Bowl of Hygeia award is presented annually by participating state pharmaceutical associations, which select their respective representatives. The award is now in its eighteenth year, and is one of the most coveted awards in the field of pharmacy.

Mr. Padussis is the twelfth Marylander to receive the award. In addition to receiving a trip to the Robins Company's corporate headquarters in Richmond, Virginia, Padussis is to be featured with other awardees in a full-page advertisement in TIME Magazine in October.

Other Maryland pharmacists who have been awarded the Bowl of Hygea are Simon Solomon, Baltimore; Norman J. Levin of Pikesville; Gordon A. Mouat, of Baltimore; the late Harold M. Goldfeder of Riverdale; Victor H. Morganroth Jr. of Baltimore; Clinton W. Englander of Oakland; I. Earl Kerpelman of Salisbury; Charles E. Spigelmire of Baltimore; Morris Bookoff of Towson; Paul Reznek of Silver Spring and James W. Truitt Jr. of Federalsburg.

Wedgwood Club Marks 75th

The Wedgwood Club of Baltimore, with a traditional antipathy for "club" functions observed its seventy-fifth anniversary as a non-club at a dinner dance at the Blue Crest North on September 25.

Dr. William J. Kinnard Jr., dean of the University of Maryland School of Pharmacy, was the featured speaker and Joseph J. Hugg, secretary-treasurer of the Wedgwood Club, served as toastmaster. Edward W. Piper, Wedgwood historian, was presented with a special award.

The Wedgwood Club, which was founded in 1900 and whose membership includes pharmacists and representatives of allied pharmacy organizations from throughout Maryland, prides itself as a fraternal pharmacy organization in which relaxation and enjoyment takes precedence over business and professional affairs. Nearly fifty Wedgwood members and their wives attended the affair.

Wedgwood Club Celebrates Seventy-Five Years of Fellowship

FIRST ROW LEFT TO RIGHT SITTING: Herman Bloom - Lee C. Rettahata - Al. J. Ogrintz - Richard R. Crane - A. E. Glaser - Kenneth L. Mills - Charles Edenfield - Joe Francik - John T. Jordan - Mark J. Golibort.

SECOND ROW SEATED: Joseph J. Hugg, Secretary - Dr. Frank Slama - Ross McComas - Samuel P. Jeppi - G. L. Stiffman - Richard Myers - Milton J. Sappe - B. A. Krusniewski - John A. Crozier - A. G. Padussis - Wm. Morganstern - Bernie Appel.

THIRD ROW STANDING: Joseph Grubb - Walter Nehrenz - Harry L. Schrader - John Cornmesser - Paul G. Gaver - Wm. A. Pokorny - Dr. William Kinnard - A. F. Turner - J. L. Johnson, Jr. - C. J. Neun - Milton J. Keppler.

FOURTH ROW STANDING: Chris A. Rodowskas - Jack Mentzer - Richard Pycha - David MacLarty - Mattie Palmer - Lou Rockman - C. J. Schmidt - Albert Binstock - Louis Sabatino - Al. V. Ohlendorf - W. E. Waples.

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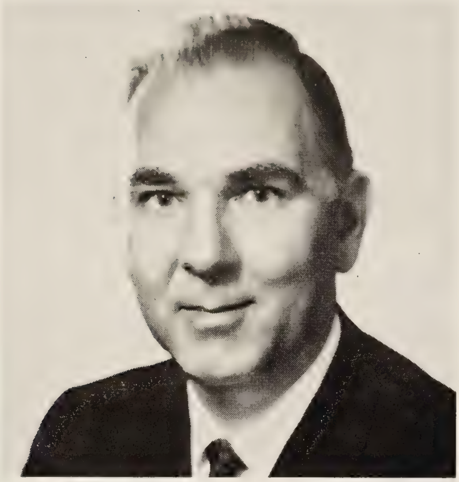

James C. Davis

James C. Davis, president of F. A. Davis and Sons Inc., of Baltimore, has been named "Man of the Year" by the National Tobacco and Allied Industries Division of the Anti-Defamation League of B'nai B'rith.

Mr. Davis was honored at a banquet in New York City.

During his years with F. A. Davis, Mr. Davis has served as president and chairman of the board of the Wholesale Tobacco Distributors of Maryland and vice president and a director of the Maryland Confectionery Association. He has also served as honorary president of the Baltimore Metropolitan Pharmaceutical Association, and has been closely associated with religious, civic and philanthropic organizations in Baltimore.

He became president of F. A. Davis and Sons in 1965. Under his leadership, the company has become one of the country's major wholesale tobacco distributors.

Bernard A. Appel Appointed Vice President - G.M. at Calvert Drug

Bernard A. Appel has been appointed Executive Vice President and General Manager of the Calvert Drug Company, Baltimore, Maryland. He began with Calvert in 1962, leaving in 1964 to join The National Brewing Company. While with the brewery, Appel had financial and marketing responsibilities, both on the division and corporate levels. He returned to Calvert in 1971 as Comptroller. In the latter part of 1974, he was appointed Operations Manager along with his financial responsibilities. Appel has had twenty years of experience in the wholesale drug business.

Noxell-Corp. Appoints Two As Vice Presidents

F. J. Harrison

Robert L. Duke

F. J. Harrison, former Group Products Manager and Robert L. Duke, former vice president and director of New Products, have been named vice presidents by the Noxell Corporation.

Mr. Harrison has been appointed vice president of the company's cosmetic products marketing division. Mr. Duke has been appointed vice president for Toiletry/Household Products Marketing.

Both men joined Noxell following careers in advertising. Mr. Harrison had been with the Lennen & Newell and Compton Agency and Mr. Duke with Benton and Bowles. Mr. Harrison joined Noxell in 1964 and Mr. Duke in 1965.

Eastern Shore Pharmaceutical Society

The Eastern Shore Pharmaceutical Society held its first Fall Meeting September 17, at the Pub in Easton, Maryland. Dr. Tom Sisca conducted a program of Continued Education following the business meeting.

Washington County Pharmaceutical Association

The film "Urinary Tract Infections" was shown at the September meeting of the Washington County Association held at the Venice Restaurant.

National Association For Sickle Cell Disease, Inc. Publishes New Series of Booklets

A new in-depth series of educational booklets on sickle cell anemia and sickle cell trait, prepared by The National Association for Sickle Cell Disease, Inc. (NASCD) for legislators, doctors, nurses, public health officials, sickle cell organizations and the general public will be published in the near future, announced Charles F. Whitten, M.D., President of NASCD.

"These booklets are designed to correct misinformation and clear up misunderstandings about sickle cell disease and trait, and to offer complete data to an audience that wants and needs more than brief fact sheets," said Dr. Whitten, at Los Angeles headquarters.

The first booklet, now available, "Guidelines for Legislation Pertaining to Sickle Cell Anemia and Sickle Cell Trait," discusses the need for state resources to aid people with sickle cell anemia; to educate the public; to train community level personnel as genetic counselors, and to make testing and counseling available.

Nine additional pamphlets are to be published later.

As they become available, the pamphlets may be ordered from the NASCD at: 945 South Western Avenue, Suite 206, Los Angeles, California 90006.

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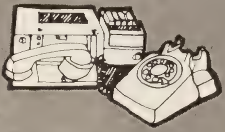

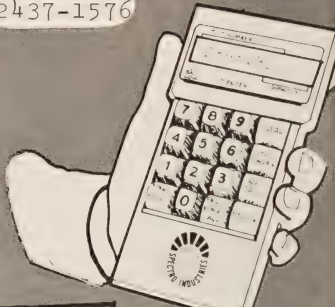

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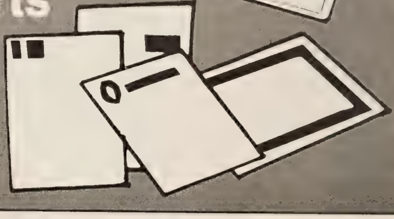

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THE MARYLAND PHARMACIST

Official Journal of
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OCTOBER 1975
VOL 51
NO 10

New and Emerging Pharmacist Roles—Are You Prepared?

Drug Product Selection: Professional and Public Policy Considerations

February 8,1976—BMPA Annual Banquet

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OCTOBER 1975 VOL. 51 NO. 10

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PETER P. LAMY, PHD., *Institutional Pharmacy Editor*
ROSS P. CAMPBELL, *News Correspondent*
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editorial

New And Emerging Pharmacist Roles – Are You Prepared?

In recent years much has been said of new roles for the pharmacist. Some of the roles already being practiced by a growing number of pharmacists are as follows:

- monitor of a patient's total medication therapy so as to assure rational therapy, help ameliorate drug misuse or abuse, prevent undesired effects (drug interactions such as with other food, diagnostic agents, sunlight; drug allergies and idiosyncrasies).
- selector of a medication therapy regimen, after diagnosis
- effective source and communicator of information on medication to those who prescribe, administer and receive drugs for the prevention, diagnosis and treatment of disease
- leader and participant in both the professional and political socioeconomic aspects of health delivery systems (planning, administration and pharmaceutical service)

It is obvious that the predominant role of the pharmacist in both community and institutional settings must be patient-oriented in contrast to the product-oriented practice of pharmacy which for so long characterized the teaching in the colleges of pharmacy.

Fortunately, many colleges of pharmacy have instituted a new curriculum. The emphasis is now turning to education and training which imparts the knowledge base and the training opportunities in professional practice directed to development of the competencies that pharmacists require in order to be effective in the kind of roles outlined above.

For pharmacists who are the products of the outmoded curricula of the past, commitment to programs of scientific and professional education are required if they are to be competent in these emerging roles.

Self-study through the reading of pertinent journals, literature and books; programmed study; cassette tapes—all are useful and may be necessary for those in remote areas or special circumstances. But, attendance at educational programs offered by professional associations at local, state and national levels must be given high priority. Participation in the C. E. course offerings at the University of Maryland School of Pharmacy is also an essential requirement for all practitioners.

To help achieve the educational goals of assuring the quality and kind of competencies—and their maintenance—that are necessary for pharmacists in the last quarter of the twentieth century, the Maryland Pharmaceutical Association is working to implement the decision of its members. MPhA is supporting the enactment of a continuing education requirement for relicensure.

Yes, graduation from a school of pharmacy qualifies for licensure. But, the true professional must grow in order to be prepared at all times to meet the realities of "future shock" in our daily lives. With the shocking dimensions of change in both our private and professional lives, life-long personal and vocational continuing education is a prerequisite for growth and for survival.

— *Nathan I. Gruz*

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Viewpoint:
Educator Argues For Constructive Action

Drug Product Selection: Professional and Public Policy Considerations*

The issue of expanded responsibility for community pharmacists in determining the source of supply on a given prescription order is a complex subject. In order to provide a sound basis for guiding both professional and public policy decisions in this area, it would be necessary to examine the historical background that resulted in the enactment of anti-substitution laws during the 1950's, as well as review the characteristics of recent modifications proposed or actually made in statutes at the state level. It also would be essential to monitor the implementation of FDA's June 20 announcement, which called for *in vivo* and *in vitro* testing, covering a large number of products as a means of resolving the matter of bioequivalency among pharmaceutical preparations with similar chemical composition. This discussion, however, is deficient in that it will bypass the former question, and devote limited attention to the latter.

Similarly, it is necessary to put aside the potential role of pharmacists in determining the pharmaceutical preparation to be dispensed either via a third category of drugs, or when the clinician specifies only the patient's diagnosis or desired therapeutic class. Thus, our focus here will be directed toward selected administrative and economic issues that are likely to arise as community pharmacists endeavor to exercise greater discretion in selecting the labeler when a drug product is available from multiple sources.

Economic Aspects

In order to justify his professional responsibility to patients individually and collectively, it would seem that pharmacists have an obligation to locate, stock and dispense only the most economical drug products, so long as the clinical response of their patients is not likely to be compromised.† Consequently, it would be useful to estimate the possible savings that could be realized through the selection of low-cost suppliers instead of more expensive labelers. The theoretical limits of this particular market, of course, are constrained by the dynamic proportion of sole-source items where substitution is not a current issue. If various bioequivalency and statutory problems can be overcome, however, consumers might be able to save over $200 million per year[1,2] by having pharmacists exercise greater discretion in determining the source of drug supply.

In order to provide more specific documentation, Table 1 furnishes comparative product price information for 1974, covering the ten most important drugs where multiple sources are available and brand sales are important. In seven instances, the published price range between the leading brand and the average of the three lowest-priced suppliers exceeded 100%, and in five cases the range exceeded 200%. Thus, trademarked products do not frequently cost just a little more, as claimed[3] by the President of the American Academy of Family Physicians. In fact, there are many examples where the branded item with virtually the highest transaction price actually commands the major share of the market. Contemporary drug product pricing, however, is a relatively unstable area, and if the impact of the new HEW policy on maximum allowable cost is effective and permeates the private sector, some of these differences could be reduced significantly.

In considering the use of subcontractors, the case of tetracycline is especially instructive. Only four firms manufacture the bulk ingredient, and no more than ten make the final dosage form.[4] One of these firms, Milan Pharmaceuticals, supplies at least 15 labelers, including Wyeth, A. H. Robins, and SmithKline. Further, in 1973, Bristol manufactured the final dosage form of ampicillin for several labelers, and these organizations collectively accounted for 70% of the total market.[5] Moreover, many of these suppliers charged a lower price than Bristol did under its own label. This practice of sub-contracting is not limited to these few examples, but characterizes the production of many other leading pharmaceutical products as well.

---

*Presented by T. Donald Rucker, Professor of Pharmacy Administration, College of Pharmacy, The Ohio State University, before the Pharmaceutical Conference of The National Association of Chain Drug Stores, Chicago, IL, September 10, 1975.

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†The direct and indirect placebo effects that might be achieved by dispensing a higher cost rather than a lower cost prescription cannot be treated here.

Implications For Professional Decision-Making

Because the actual number of prefabricators for a given product often is significantly lower than the number of labelers, a pharmacist given discretion for selecting the source of supply may encounter a relatively low probability of substituting an agent that fails to satisfy minimum bioequivalency requirements. Indeed, this particular risk can be eliminated altogether with respect to certain products, if the manufacturer could be identified on the label affixed to the container.

In addition, the overall probability of adverse selection by a pharmacist is reduced even further when we consider that the matter of bioequivalency cannot arise on bona fide original prescription orders*, especially where no refills are authorized.

Some perspective may be gained about the true magnitude of a bioequivalency problem by referring to the list of the 200 most frequently dispensed drugs in 1974. The FDA recently identified 44 of these particular items where additional testing will be required, in order to assure that different sources of the same agent produce equivalent therapeutic effects and satisfy minimum bioavailability standards as well. It should be noted that this figure is somewhat misleading. Among the important multiple-source products, only reserpine, digoxin and prednisone were cited. Since the FDA list has been promulgated for the purpose of improving product reliability, and hence subsequent de-listing, one can anticipate that pharmacists may be expected to assume expanded responsibilities in product selection as these problems are resolved.

One approach for determining a drug's therapeutic properties is to assume that all practitioners will manifest both initiative and competence in evaluating data from clinical trials. This model, however, is weakened not only by the paucity of such information, but by the possibility that sponsors can, according to a leading manufacturer (Abbott), design studies that are technically biased.[6] Moreover, one should anticipate that the research design and method of analysis usually will vary from manufacturer to manufacturer, even in the absence of premeditated efforts to produce different results.

Relatively few practicing physicians or pharmacists, though, have the prerequisite training in biostatistics coupled with the necessary experience derived from a continuing responsibility for evaluating bioavailability data. Even fewer possess the expertise required to assess comparative blood levels in terms of differences that would actually lead to an inferior or superior clinical response.[7] Therefore, it would seem that, except for selected specialists, practitioners can provide maximum protection for their patients by insisting that these questions be resolved primarily through the leadership of independent bodies, such as the FDA and its panels of expert consultants.*

Table 1

Published Price Characteristics For Leading Multiple — Source Drug Products, USA, 1974

Drug Product and Strength	Typical Prescription Quantity	Adjusted Product Cost for Typical Quantity		Price Difference in Percent
		Average of Lowest Priced Items	Leading Brand	
Tetracycline, 250 mg.	20	$ .19	$ .76	300%
Ampicillin, 250 mg.	20	1.19	2.48	108
Prednisone, 5 mg.*	40	.21	.66	214
Digoxin, 0.25 mg.*	100	.47	.71	51
Meprobamate, 400 mg.	45	.30	1.76	487
Erythromycin, 250 mg.	50	3.72	7.28	96
Penicillin G, 200,000 units	16	.39	1.55	297
Penicillin VK, 125 mg.	20	.74	.97	31
Reserpine, 0.25 mg.*	100	.12	3.56	1,967
Chloral Hydrate, 500 mg.	30	.45	1.24	176

*Currently on the FDA List where bioavailability studies are requested.

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*It is possible, of course, to encounter a problem of bio-availability in such cases. It would seem that the most efficient procedure here is to strengthen various FDA controls so that any product failing to satisfy appropriate therapeutic standards can be removed from the market.

*In terms of the optimum utilization of scarce resources within society, it would seem far more cost-effective to place the primary responsibility for resolving questions covering bioavailability and bioequivalency in the hands of FDA and its various groups of technical advisers. The conventional wisdom, however, overlooks important advantages of specialization in decision-making by encouraging busy practitioners to make ad hoc judgments in this complicated area. Allocation of professional time for studying blood levels, for example, tends to reduce the attention that clinicians can devote to other aspects of diagnosis and treatment.

Adoption of the proposed policy, therefore, would lead to a significantly reduced role in this complex matter for some physicians and pharmacists, and confirm their non-participation for many others. In any event, it seems that self espousal, and even promotion by a party with a vested interest in market sales, is a very uncertain technique for helping practitioners differentiate between relative clinical benefits attributable to products that are linked together by the same generic term but sold under separate labels.

Indirect Economic Factors

Potential savings for prescriptions purchasers, however, are not dependent exclusively upon the ability of a pharmacist to capitalize on actual price differences that exist between alternative labelers. Intelligent product acquisition also has an impact on overhead expenses. Prescription department managers and their customers, therefore, should be concerned with the nature of indirect economies that stem from (a) reductions in per-unit product cost when larger quantities can be ordered from a single source, (b) lower inventory carrying costs, including more rapid turn-over per item stocked, and (c), decreased re-ordering time experienced by pharmacists when they can deal with fewer suppliers and buy in larger quantities.

Savings such as these, however, are restricted by the power that prescribers retain to override controls under HEW's maximum allowable cost program, as well as most of the revisions enacted or proposed in state anti-substitution laws. Loopholes of this type, consequently, perpetuate duplicate inventory and related problems that currently encumber the practice of pharmacy.

About two years ago, a study sponsored by the Pharmaceutical Manufacturers Association attempted to demonstrate that the inventory burden of stocking multiple brands, as illustrated by a sample of ten generically-defined items, brought about no significant increase in cost for the average pharmacy. In commenting on the bias of items selected for this national survey, and thus the unreliability of the findings, one expert concluded that this organization "deliberately chose a format which would prove their own preconceived ideas."[8] Consumer welfare, however, might be advanced if society would commit fewer resources to comparative studies of this nature and more to the development of methods that are likely to minimize inventory costs.

It would be hazardous to assume that consumer savings related to product cost are held down exclusively by the existence of anti-substitution laws. For example, the inordinate proliferation of product variation within a given chemical family by a single labeler, coupled with different strengths, dosage forms, and even patient package options, also may be responsible for increasing prescription expenses far beyond the level justified by possible benefits. Examination of this phenomenon, covering items such as Darvon, Phenergan, Equanil, Robitussin and Ortho-Novum, would provide enlightened guidance for those interested in controlling outlays for pharmaceutical products.

Perhaps the most significant indirect economic factor associated with our subject arises because most pharmacists lack a reliable system for ensuring that savings generated by prudent selection are passed on to the buyers of prescribed medications. Numerous drug manufacturers and physicians[9] have admonished pharmacists continually on this point. This criticism implies that requests for greater discretion are really self-serving, since they are designed to enhance the financial position of dispensers.

This particular argument, however, has no validity that would lead one to support the continuance of anti-substitution laws in their present form. On the other hand, the logic of demanding that pharmacy establish a defensible basis for determining overhead charges is a separate issue that requires a constructive response. The foundation for resolving this problem would seem to lie in the rapid installation of a uniform cost-accounting system[10] that can serve as the basis for the subsequent adoption of a unique dispensing fee in each outlet. Implementation of this recommendation not only will remove any incentive for dispensing high-cost products, but will provide the vendor with objective information for calculating an accurate fee level in the first place.

Options for Society

Let us assume that society wishes to construct a general program that will help to minimize the product cost component of prescription services. In the development of such a plan, it seems imperative to distinguish between techniques that offer incomplete benefits as against those that promise more optimum results.

Among the former, one would include the efforts of pharmacists to overcome out-of-stock problems by contacting the prescriber and attempting to persuade him to sanction the dispensing of the same chemical entity under another label. In order to mitigate the burden of handling such prescriptions on an individualized basis, a few pharmacists have been able to convince some clinicians in their area to sign an agreement giving them the power of substitution within the terms of the statement. Others have supported the establishment of community or state formularies as a means of expanding the pharmacist's role in product selection. While a certain degree of success may be achieved through ad hoc adjudication or inter-professional cooperation at the local level, forms of intervention such as these are likely to produce administrative burdens that decrease the productivity of both pharmacist and prescriber. In addition, they may lead to an increase in the cost of pharmacy operations* without offering a comprehensive solution to either practitioner.

In order to deal more fundamentally with our problem, it would seem that the primary means for both expanding and controlling pharmacist responsibility in product selection lies at the macro level. In addition to the measures noted above, the following options might be employed.

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*Real increases in cost are not likely to be significant as long as the prescription department is functioning below capacity.

(1) The American Society of Internal Medicine and the APhA Academy of Pharmacy Practice recently published joint guidelines that call for the prescription order to identify the patient's symptom, and specify the indication or intended effect for which the drug would be used. If information such as this can be included on the prescription form, pharmacists will have a firmer foundation for making sound judgments about product selection.

(2) Physicians and pharmacists could both serve their patients better if a statutory requirement existed wherein the actual manufacturer of a drug product would appear on the label. Although California and Florida have enacted legislation to achieve this end, it would seem that Federal regulation is needed to prevent the proliferation of incompatible stipulations.

Despite the apparent agreement of pharmacy groups and the Pharmaceutical Manufacturers Association to support uniform controls of this type, the problem still awaits resolution at the national level.

(3) In order to reduce further the probability that subtherapeutic products could be dispensed, the Food, Drug and Cosmetic Act should be amended so that the manufacturing facility for any newly marketed product must be certified prior to the distribution of the chemical agent. Neither patients, practitioners nor competitors should be expected to sustain the risk that could emanate from the sale of drugs that might fail to deliver the implied therapeutic response.

(4) Fortunately, some aspects of consumer attitudes toward product selection are now available through the work of Nelson and Gagnon.[11] Unfortunately, another significant problem, possible changes in pharmaceutical research and development under conditions of increasing price competition, is virtually unknown.

While it seems clear that the R & D cost of successful products should be recovered during the early period of patent protection, the best method of charging off the expense of "dry-holes" is debatable. Funds for this purpose can be obtained by levying an internal surcharge on patented agents or a broader impost on all products sold. Capital for research generally can be obtained from the sale of securities or through the use of retained earnings. In any event, no model is known to exist that addresses this complex problem from the point of view of encouraging the development of important therapeutic agents, specifying the optimum source of financial support, and minimizing the allocation of resources consumed by the R & D process.

In summary, the most critical issues concerning product selection no longer seem to lie in the immediate areas of professional jurisdiction and bioequivalency. With the advent of MAC, the impending demise of anti-substitution protection, and the possibility of even greater controls through national health insurance, it is necessary to shift our attention to basic economic problems involving product innovation, pricing, and the efficiency of the distribution process generally. Practitioners, drug producers and government officials could make a positive contribution if they would propose constructive methods for facilitating this transition.

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3. *PMA Bulletin*, (May, 1974), p. 9.
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5. *Ibid.*, p. 2.
6. *Ibid.*, p. 41.
7. A similar argument based upon the absence of data was advanced in *J.A.M.A.*, 218: 448 (Oct. 18, 1971).
8. Stuart, D.M., "The Role of the Pharmacist in Product Selection," *Pharm. Index*, 16:6 (July, 1974).
9. *Annals of Int. Med.*, 81:261 (Aug., 1974).
10. Siecker, B.R., "Policy Considerations of the NPIC Uniform Accounting System for Pharmacy," *Ohio Pharmacist*, 24:10-12 (April, 1975).
11. Nelson, A. and Gagnon, J., "Brand Substitution—The Consumer's Viewpoint," *J. Am. Pharm. Assoc.*, NS 15:382, (July, 1975).

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maryland board
of pharmacy

Pharmacy Changes

The following are the pharmacy changes for the month of September:

New Pharmacies

Dart Drug Corporation #230, Herbert Haft, President; 417 South Jefferson Street, Frederick, Maryland 21701.

Changes of Ownership, Address, Etc.

Marcus Pharmacy, Inc., Michael Marcus, President; (Change from individual ownership to corporation); 2021 West Pratt Street, Baltimore, Maryland 21223.

Broadway Pharmacy, Inc., Arnold Grabush, President; (Change from Partnership to corporation); 1645 East Baltimore Street, Baltimore, Maryland 21231.

No Longer Operating As Pharmacies

Dart Drug Corporation, Carrollton, Herbert Haft, President; 8321 Annapolis Road, New Carrollton, Maryland 20784.

calendar

1976

February 8 (Sunday) BMPA Annual Banquet and Dance—Blue Crest, Pikesville
(Start making up a table of friends)

April 3-8 APhA Annual Convention, New Orleans

June 18-20 MSHP Annual Seminar, Sheraton Fontainebleau, Ocean City, Md.

June 20-23 MPhA Annual Convention, Sheraton Fontainebleau, Ocean City Md.

University of Maryland School of Pharmacy

Appointments Announced By School of Pharmacy

Dean William J. Kinnard Jr. of the University of Maryland School of Pharmacy has announced appointments and promotions for the 1975-76 academic year.

Dr. William G. Crouthamel, formerly with the West Virginia University School of Pharmacy, has joined the UMAB staff as associate professor of pharmacy. At WVU, he served as assistant professor of pharmacy with major research interests in the area of biopharmaceutics and pharmacokinetics.

Dr. Richard M. Oksas, assistant professor of clinical pharmacy, is developing clinical pharmacy services in the Dental School at the University of Maryland at Baltimore as part of a special project. He formerly was assistant professor of pharmacology at the University of Southern California.

Dr. Marilyn Speedie comes to the pharmacy school from the University of Oregon School of Pharmacy and is an assistant professor of pharmacognosy.

Dr. Stuart M. Speedie has joined the pharmacy school faculty as director of the Office of Educational Development and assistant professor of pharmaceutical education. He previously worked as program associate and evaluation specialist at the Northwest Regional Educational Laboratories in Portland, Oregon.

The following faculty members were promoted:

To professor: Dr. Dean E. Leavitt, pharmacy administration.

To associate professor: Dr. Joseph S. Adir, pharmacology/toxicology and pharmacy; Dr. Robert A. Kerr, clinical pharmacy; Dr. Robert T. Louis-Ferdinand, pharmacology/toxicology; and Dr. Karl-Heinz A. Rosler, pharmacognosy.

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION
(Act of August 12, 1970; Section 3685), Title 39, United State Code)

1. Title of Publication: MARYLAND PHARMACIST

2. Date of filing: September 24, 1975.

3. Frequency of issue: Monthly

4. Location of known office of publication: 306 N. Gay Street, Baltimore, Maryland 21202

5. Location of the headquarters or general business offices of the publishers: 650 W. Lombard Street, Baltimore, Maryland 21201

6. Names and addresses of publisher, editor and managing editor:
Publisher: Maryland Pharmaceutical Association, 650 W. Lombard St., Baltimore, Md. 21201
Editor: Nathan I. Gruz, 650 W. Lombard Street, Baltimore, Md. 21201
Managing Editor: Nathan I. Gruz, 650 W. Lombard Street, Baltimore, Md. 21201

7. Owner (If owned by a corporation, its names and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.) Maryland Pharmaceutical Association, 650 W. Lombard Street, Baltimore, Maryland 21201, (Non-Profit Corporation)

8. Known bondholders, mortgagees and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities: None

9. For optional completion by publishers mailing at the regular rates (Section 132.121, Postal Service Manual
39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 4359 of this title shall mail such matter at the rates provided under this subsection unless he files annually with the Postal Service a written request for permission to mail matter at such rates."
In accordance with the provisions of this statute, I hereby request permission to mail the publication named in item 1 at the reduced postage rates presently authorized by 39 U. S. C. 3626.
Nathan I. Gruz, Editor

11. Extent and nature of circulation

A. Total No. Copies Printed	1400*	1450†
B. Paid Circulation		
1. Sales Through Dealers and Carriers, Street Vendors and Counter Sales	None	None
2. Mail Subscriptions	1234	1335
C. Total Paid Circulation	1234	1335
D. Free Distribution by Mail, Carrier or by Other Means		
1. Samples, complimentary, and other free copies	75	75
2. Copies Distributed to News Agents, but not sold	None	None
E. Total Distribution	1309	1410
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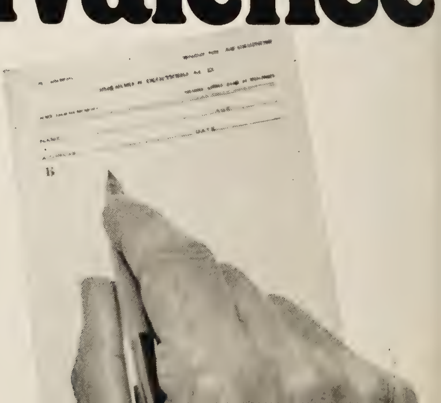
Bioequivalence



the weight of scientific opinion:

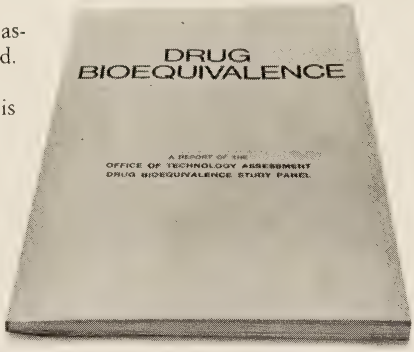
Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:

"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."


DRUG BIOEQUIVALENCE
A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:
(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

P·M·A
Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

protecting the integrity of the Rx's you dispense

a matter of professional interest to the pharmacist
from Merck Sharp & Dohme

there's a great deal being said about hypertension these days...

and it's being taken to heart

As a pharmacist, you are well aware that the cardiovascular complications of hypertension can mean early death or crippling disease: congestive heart failure, renal failure, stroke, myocardial infarction.

The prescriptions that you fill for diuretics and other antihypertensive medications are, along with proper diet and weight control, the best preventive measures known against these complications. And the increased number of these prescriptions may have led you to wonder whether the actual incidence of hypertension has risen.

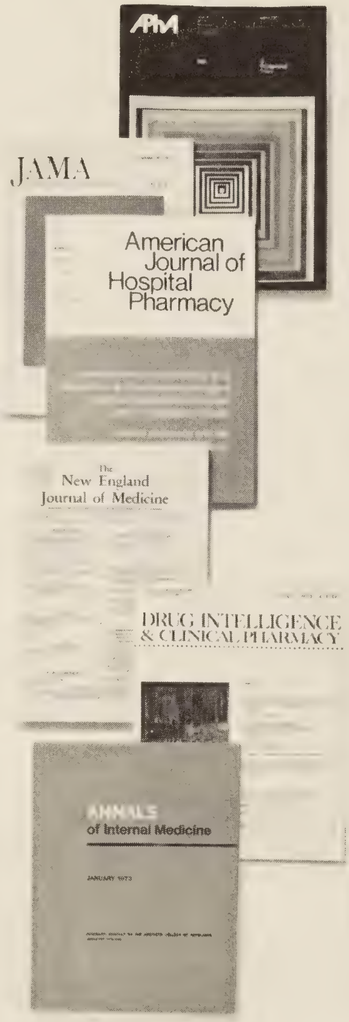
Perhaps it has. But not necessarily. Improved case-finding and physicians' decisions to institute drug treatment at an earlier stage of the disease could also be responsible.

At what reading does hypertension begin?

There are differing views as to where hypertension begins: some physicians say blood pressure readings of 140/90 mm Hg warrant further examination, while others use 160/95 mm Hg as the cutoff. But there is little doubt that a person's risk of developing the complications of hypertension is proportional to his blood pressure level.

Prompt detection and treatment urged

It can be expected that more people will become aware of their hypertension. An estimated 20 million Americans currently suffer from the disease.


APhA
JAMA
American Journal of Hospital Pharmacy
The New England Journal of Medicine
DRUG INTELLIGENCE & CLINICAL PHARMACY
ANNALS of Internal Medicine
JANUARY 1973

A recent report in the *Journal of the American Medical Association* of a study conducted among nearly 23,000 adults employed in the Chicago area revealed that most who had high blood pressure did not know of their condition and that few of those who knew about it were receiving adequate treatment.[1] The editors of the journal urged doctors to "take a more responsible view toward [this] treatable illness."[2]

A growing body of evidence suggests that prompt detection and treatment substantially lower the risk of serious complications. Toward that end, the creation and funding of a National Hypertension Program were announced in 1972 by former Secretary of Health, Education and Welfare, Elliot L. Richardson.

Vital, growing role of pharmacist

Dr. Theodore Cooper, former Director of the National Heart and Lung Institute, which is the focal point for coordinating the activities of this program, views the pharmacist as contributing to its success "both in his capacity as an actual 'health educator' and advisor to the public and in his capacity as a colleague of the prescribing physician."[3]

MSD MERCK SHARP & DOHME recognizes the vital role played by pharmacists in any therapeutic regimen and is pleased to have brought you this information. We offer our continuing support in keeping you abreast of developments in several medical fields, including the treatment of hypertension.

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1. Schoenberger JA, Stamler J, Shekelle RB, Shekelle S: Current status of hypertension control in an industrial population, JAMA 222:559, Oct 30, 1972. **2.** Hypertension: A neglected phenomenon, editorial. JAMA *222*: 579, Oct 30, 1972. **3.** Cooper T: The National Hypertension Program, J Am Pharm Assoc *NS13*:135, March 1973.

institutional pharmacy

The following reports have been reprinted from the Union Memorial Hospital Pharmacy Bulletin.

Nitroglycerin Storage Requirements Revisited

Much has been written over the years concerning the packaging and stability of Nitroglycerin sublingual tablets. Present standards are explicit and require:

1. All Nitroglycerin tablets must be packaged in tight (as defined by the U.S.P.) glass containers with tightly fitting metal screw caps.
2. No more than 100 tablets may be packaged per container.
3. All Nitroglycerin sublingual tablets must be dispensed in their orginal containers and bear the label —"WARNING: To prevent loss of potency, keep these tablets in the original container. Close tightly immediately after use."
4. All Nitroglycerin tablets should be stored at "controlled room temperature" (59°-86°F).

The need for constant patient reminders concerning the requirements and their importance in assuring the availability of a product with sufficient potency to produce the desired response when needed, must be recognized.

It has been suggested that each and every patient receiving a prescription for Nitroglycerin sublingual tablets be reminded that the tablets should:

1. be stored in a tight container up to the time of administration.
2. never be placed in open medication cups for long periods of time.
3. never placed in containers (no matter how tight) with other tablets or labels.
4. never be packed with large quantities of cotton or other bottle fillers.
5. never be strip packaged, even for short periods of time.
6. preferably not be stored in a refrigerator unless ambient conditions are unusually hot (greater than 100°F.).

Properly stored Nitroglycerin tablets are stable for long periods of time and do not need replacement for reasonable periods of time.

More detailed information can be obtained by writing: NITROGLYCERIN, University of Maryland School of Pharmacy, Department of Pharmacy, 636 W. Lombard Street, Baltimore, Maryland 21201.

Interactions of Antiarrhythmic Drugs

One of the major areas of application of cardiovascular drugs is in the treatment of cardiac arrhythmias. If one accepts the common definition of an arrhythmia as any disorder of rate, rhythm, origin, or conduction of impulses within the heart, it is easy to understand why such conditions might be relatively common. It is estimated that the incidence of arrhythmias in acute myocardial infarction is 80 to 90%, in general anesthesia, 20 to 50%, and in digitalization of hospitalized patients, 10 to 25%.

Because the antiarrhythmic drugs have potent effects on excitable cell membranes they tend to interact with other classes of drugs and with ions which act on membranes.

Drugs such as Quinidine and Procainamide (PRONESTYL), because they are excreted largely in the urine, are theoretically subject to changes in half-life by manipulation of urinary pH. It has been shown that these drugs are removed from the body more rapidly when the urine is acid than when it is alkaline. The Phenothiazine tranquilizers have been shown to have some Quinidine-like effects, as has Droperidol (INAPSINE), the tranquilizer component of the anesthetic mixture INNOVAR. Therefore, patients receiving any of these agents should be started with smaller than usual doses of Quinidine or Procainamide. Quinidine has been reported to increase the effects of oral anticoagulants such as Warfarin; therefore, prothrombin levels should be monitored carefully in patients receiving both drugs. Propranolol (INDERAL), by virtue of its beta-adrenergic blocking effects, interacts with all of the beta-adrenergic stimulants, notably in patients taking Isoproterenol or epinephrine for asthma. Propranolol has been reported to augment the hypoglycemic effects of antidiabetic agents, presumably through beta-adrenergic blockade.

NOTE: MORE POTENTIAL INTERACTIONS WITH THE ANTI-ARRHYTHMIC DRUGS WILL BE DISCUSSED IN A FUTURE ISSUE.

Ref: Hansten, P.D., DRUG INTERACTIONS, ed. 2, Lea and Febiger, 1973
Katzung, B., Therapeutics, Vol. 2, No. 3, 1974

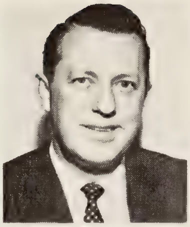
Formulary Antiemetics

The chart below describes certain characteristics of some drugs intended for the relief of nausea and vomiting. The drugs promoted as antiemetics include anticholinergics, antihistamines, phenothiazines and several other

RAY HECKMAN

DENNIS CRAWFORD

DEAN SULLIVAN



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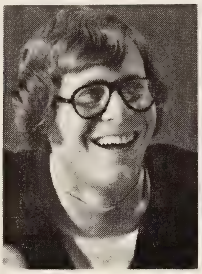

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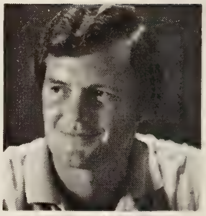

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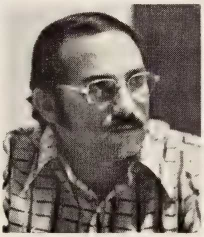

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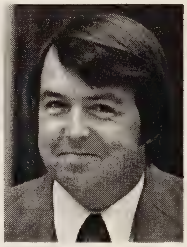

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agents not in these pharmacologic classes. In general, all antiemetic drugs are more effective when given prophylactically.

DRUG	COMMENT
Anticholinergics, e.g. Scopolamine	Effective in preventing motion sickness.
Antihistamines, e.g. Dimenhydrinate (DRAMAMINE) Diphenhydramine (BENADRYL) Meclizine (ANTIVERT, BONINE) Promethazine (PHENERGAN)	Effective in preventing motion sickness — no evidence that one is more effective than another except for PHENERGAN (a phenothiazine — antihistamine) that may be effective in motion sickness when other antihistamines are not.
Phenothiazines, e.g. Prochlorperazine (COMPAZINE) Chlorpromazine (THORAZINE)	Most effective agents for vomiting caused by acute GI disorders, drugs, or radiation. THORAZINE is said to have less antiemetic effect than COMPAZINE. Toxicity includes: drowsiness, hypotension and acute dystonic reactions (last effect more common with (COMPAZINE).
Other Benzquinamide (EMETE-CON)	Probably as effective and probably not as toxic as COMPAZINE — three times as expensive — not a phenothiazine — may have mild pressor effects — available now only as IM injection.
Haloperidol (HALDOL)	Has been used *investigationally* orally and IM as an antiemetic. Said to be quite effective — references on request.
Trimethobenzamide (TIGAN)	Effectiveness has never been demonstrated —"There are now eight double blind studies in which this highly advertised and widely used drug has been found to have no advantage over a placebo in the treatment of nausea and vomiting . . . this agent would not seem to have any role in clinical practice." Moertel, *Gastroent* 57:262 (1969)
COCA COLA Syrup	Probably more effective than a placebo — non-toxic.

Propoxyphene Napsylate-Acetaminophen (Darvocet-N) — New Strength

The combination of Propoxyphene Napsylate and Acetaminophen has been available containing 50mg. and 325mg. respectively. The recommended dosage has been two tablets to be taken every four hours when needed. There is now available a double strength tablet containing the exact equivalent of two tablets (100 mg. and 650 mg. respectively). The new product strength is designated DARVOCET-N-100, and to avoid confusion when prescribing this combination the physician must include that designation in his(her) order. The new tablet is scored to allow for proper administration of half the recommended dose.

Tobramycin—A New Aminoglycoside Antibiotic

Tobramycin or NEBCIN injection has been released by the FDA and is being marketed by Eli Lilly and Company. Tobramycin is an injectable aminoglycoside antibiotic indicated in the treatment of serious gram-negative infections including those caused by susceptible Pseudomonas species. Much of what has been learned about gentamicin is applicable to tobramycin since both drugs' antimicrobial activity, pharmacokinetics, toxicities, and clinical efficacy are similar. A comparison of these characteristics is offered as follows:

Microbiology:

MIC's for isolates of Pseudomonas from clinical specimens indicate that, in vitro, tobramycin is more active than gentamicin.[1,2] Species *highly* resistant to gentamicin have been usually resistant to tobramycin.[1]

Dosage and pharmacokinetics:

After IM doses of 1 mg/Kg, serum concentrations peak to 4 mcq/ml and measurable levels persist for up to 8 hours. Adults with serious infections and with normal renal function can be given 1 mg/Kg q8h without accumulation. Doses up to 5 mg/Kg/day may be administered to patients with life-threatening infections. This dose should be reduced to 3 mg/Kg/day as soon as possible. Renal clearance is similar to that of endogenous creatinine.

The kinetics of tobramycin are altered in patients with impaired renal function. It has been suggested that for patients with impaired renal function dosage modification may be accomplished by increasing the dosage interval (after a normal loading dose) to 6 times the serum creatinine value.[3] This simple dosage modification probably does not hold for patients with advanced renal disease.[4] A reduced dosage nomogram based on *creatinine clearance* is included in the package literature.

Toxicity:

Tobramycin *may* be less oto- and nephrotoxic than gentamicin. As might be expected at this time only animal data are available to support a diminished potential for these side effects.[5] Concurrent use of other neurotoxic and/or nephrotoxic agents should be avoided.

1) *Antimicrobial Agents and Chemo. 6:*442 (Oct.) 1974
2) Proced. Eighth An. Congress of Chemotherapy, Athens, *Exerpta Medica Publications* 1974
3) *Antimicrobial Agents and Chemo. 3:*469 (Apr.) 1973
4) *Antimicrobial Agents and Chemo. 5:*611 (June) 1974
5) *Arch. Oto. 96:*505 (Dec.) 1972

Reprinted with permission from: "Pharmacy Newsletter for Physicians," Vol. *6,* Number 7, Sept. 1975, Hospital of the University of Pennsylvania.

Tobramycin has been added to a number of hospital formularies, however, frequently dispensing is restricted to patients who have a gentamicin-resistant infection.

This policy is based on the expectation that tobramycin will be of *real* value in treating gentamicin-resistant infections, and on the assumption that unregulated use of this drug will result in increasing resistance, similar to resistance patterns which have developed with other aminoglycoside antibiotics.

Dacarbazine

Recently released by the FDA, dacarbazine (DTIC-DOME) or imidazole carboxamide is indicated in the treatment of metastatic malignant melanoma. Darcarbazine produces tumor shrinkage in about 20% of patients with a median duration of remission of about four months.[1] Dacarbazine is only slightly protein bound (5%) and is excreted by tubular secretion rather than glomerular filtration. Its plasma half-life after IV administration is approximately 35 minutes with 46% of an administered dose being recovered in the urine after six hours. Of this 46%, almost half was unchanged and a like quantity was a metabolite. Anorexia, nausea and vomiting are the most frequently noted adverse effects with over 90% of patients being affected with initial doses. Leukopenia and thrombocytopenia occur in only about 20% of patients treated with doses of 2 mg./Kg./day. Infrequent adverse effects include a flu-like syndrome or fever, malaise and myalgias; diarrhea occurs rarely. Dacarbazine has also been shown to be synergistic with adriamycin for the treatment of metastic sarcoma.

1. Anon. *The Medical Letter,* 16:27 (March 15), 1974
2. Gottlieb, J. A., *Cancer Chemother. Rep., 58:*265-270, 1974.

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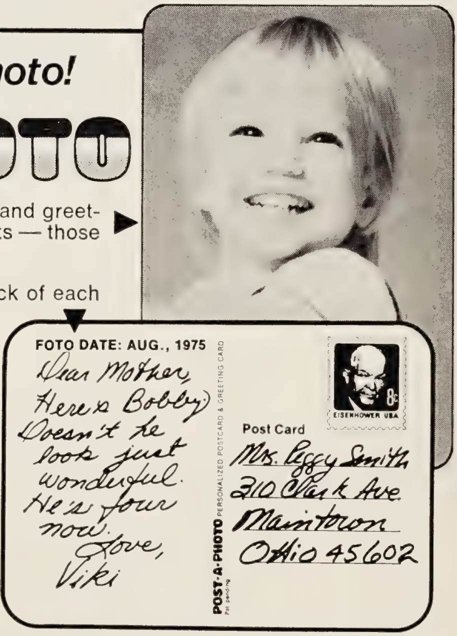

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Maryland Society of Hospital Pharmacists

October 9, 1975

The October meeting of the Maryland Society of Hospital Pharmacists was held at the United States Public Health Service Hospital, Wyman Park, on October 9th, 1975. The meeting was preceded by a presentation by Kenneth R. Scott, Ph.D., Associate Professor of Biomedicinal Chemistry at Howard University. The presentation was entitled "Recent advances in Hypertension Therapy."

The Minutes were approved as read and Treasurer Telak presented his report. He reported that the dues notice will be included with next month's newsletter.

COMMITTEE REPORTS

MEETINGS — Mr. Gerald John reported the November meeting was set as a joint meeting with the D.C. Society of Hospital Pharmacists, at Schrafft's Colony 7 with no business meeting. He announced one December 4th, 1975 — meeting for Mercy Hospital. From December 7th, 1975 to December 11th, 1975 — A.S.H.P. Midyear Clinical Meeting was scheduled for Washington, D.C. M.S.H.P. was asked to help with the Courtesy Booth at the Midyear Meeting.

OLD BUSINESS — None

A discussion as to meeting times was held — 6:30, 7, or 7:30. A future M.S.H.P. newsletter will survey the membership.

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Revolution In Attitudes Towards High Blood Pressure

A "revolution" has occurred in the attitude of physicians toward high blood pressure. Doctors who once told patients with mild cases to "relax and forget it and come back to see me in another year" are now treating those same patients aggressively, according to Norman M. Kaplan, M.D.

Dr. Kaplan is Professor of Medicine, University of Texas Health Science Center, Dallas, and Deputy Executive Vice President, Office of Research Programs, American Heart Association.

The medical community's renewed interest in high blood pressure follows the impressive results of studies that have been published during the last few years, which have shown marked reductions in strokes, kidney damage and other complications by control of hypertension, the medical term for high blood pressure.

Although in the early stages of the disease—perhaps the first 10 to 20 years—there is usually no outward sign of illness, "damage to the vessels is occurring and eventually will lead to trouble," Dr. Kaplan said. Hypertension affects the important organs of the cardiovascular system, causes progressive damage, and can lead to heart attack, stroke and kidney disease.

Possibly 20 million or more Americans will require treatment, Dr. Kaplan predicts, which is likely to create a problem for the health care system as it exists today. However, he added, steps can be taken to cope with the situation. Of these, the most important is patient education, he said.

Many individuals will need to change their lifestyles, to lose weight, reduce salt intake, stop smoking, keep in good physical condition through exercise, and decrease stress levels, he stated.

They also will need to take and continue taking prescribed medication. Some patients complain of a loss of pep and energy, and a feeling of "vague malaise," when the pressure is initially lowered, and unfortunately, Dr. Kaplan observed, this often is the reason patients stop taking their medicine.

However, he explained, the majority of patients come out of these "initial doldrums" and in general feel better as a result of continuing medication. Most importantly, by staying on therapy that keeps the blood pressure under control, patients will be healthier and live longer.

A big problem, Dr. Kaplan added, is that "human nature finds it difficult to accept the fact that treating a condition today that has no symptoms will prevent suffering its complications perhaps 10 or 20 years from now."

Promising Psoriasis Treatment Involves Drug, Special Light

The oral administration of methoxsalen plus exposure to a newly-developed, high-intensity, longwave ultraviolet light system has led to complete clearing of skin lesions in 21 psoriasis patients, according to a Boston scientist whose work is supported by the National Cancer Institute (NCI) and the National Institute of Arthritis, Metabolism, and Digestive Diseases (NIAMDD).

The management of generalized psoriasis, whether by topical or systemic therapy, has not been satisfactory for the two to eight million Americans who suffer from this frustrating and unsightly skin disease. Use of methotrexate, the most effective systemic agent, may be associated with severe liver toxicity, while ultraviolet radiation following local application of crude coal tar requires hospitalization for up to two weeks.

Complete and rapid clearing of generalized psoriasis has now been described in 21 patients following oral administration of a photoactive drug, 8-methoxypsoralen (methoxsalen), and exposure to high-intensity, longwave ultraviolet light. Although these results are preliminary, and maintenance therapy is required in most cases, they could lead to development of a safe and effective ambulatory therapeutic modality for psoriasis.

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PHARMACY AND THERAPEUTICS BULLETIN
University of Maryland Hospital

ARTHUR N. RILEY, M.S., *Editor*

Parenteral Diphenylhydantoin (Dilantin$^{(R)}$)

There are certain clinical situations in which the use of Diphenylhydantoin (Dilantin$^{(R)}$, DPH) parenterally would seem to be beneficial: (1) acute seizure emergencies where a rapid effective blood level is desired, (2) when a patient, for one reason or another, is unable to swallow the capsules, and (3) digitalis induced arrythmias where parenteral administration of DPH has shown some promise (this is currently considered to be an investigational use of DPH).

The literature indicates some confusion over the efficacy of parenteral DPH for the treatment of acute seizure disorders. This confusion seems to be at least in part a function of the improper use of parenteral DPH by some clinicians with respect to both dose and route of administration. There is a good evidence that DPH is very poorly absorbed from muscle and that IM injection of DPH must be regarded as practically without effect on status epilepticus. This seems to be due to precipitation of the DPH in the tissue upon injection since the liquid has a pH of 12. This means that in acute situations where a rapid blood level of diphenylhydantoin is desirable, the preferred route of administration is intravenous. However, the use of I.V. Dilantin is not without hazards. Adverse cardiopulmonary and vascular effects (apnea, asystole, hypertension) are encountered when DPH is infused to rapidly. There is evidence that the propylene glycol diluent may be responsible for the hypertension and respiratory arrest that may be encountered. It is clear then the I.V. Dilantin must be administered cautiously. It is necessary to time the rate of infusion (50 mg. per minute or less, with aged patients or patients with existing heart disease, the rate should not exceed 50 mg. every 2 or 3 minutes and, in fact, some would consider DPH to be contraindicated in such patients), and monitor the EKG and vital signs. If hypertension, cardiac arrythmias, or a decrease in ventilation occur, then infusion must be slowed or stopped. Dilantin cannot be diluted in an infusion bottle of volutrol since it will precipitate in all infusion solutions. It should be infused directly into a vein or into I.V. tubing as close to the vein as possible, since it will precipitate in any solution within the tubing. Conscious patients frequently complain of burning pain at the site of infusion, particularly if the drug is injected into a small vein (this is due to the high pH).

The second factor to consider in the use of DPH in an acute situation is dose. The therapeutic blood level of diphenylhydantoin is 10-15 ug/ml. It takes from 5-15 days to achieve this level with daily doses of 300-400 mg. It has been shown that therapeutic levels can be achieved rapidly (over 1-2 hours) by using an I.V. loading dose. The average size adult requires 1000-1200 mg. (about 15 mg./kg. body weight) to achieve therapeutic levels. The necessity of such large I.V. doses is probably explained by the rapid distribution of the drug in tissues. Once the loading dose has been given, then a daily maintenance dose of 300-400 mg. is usually sufficient. Since dose related toxic effects (i.e., nystagmus, ataxia, and lethargy) can be tolerated and correlate well with blood level, the dose should be increased until either seizures are controlled or clear toxic side effects occur. If the patient is showing clear signs of DPH intoxication, but is still having seizures, then it is reasonable to assume that DPH alone is ineffective.

In patients who are on DPH (i.e., have a therapeutic level already) and are unable to swallow the capsules, one can use several approaches: (1) give the drug as a suspension via NG tube, (2) give the same dose by slow I.V. infusion, or (3) give twice the dose by the intramuscular route. There is some evidence that giving double the dose IM in patients who already have therapeutic blood levels will maintain such patients. If this is done, injection sites should be rotated due to the great amount of irritation secondary to the high pH of the liquid.

In summary, the following principles should be kept in mind when using parenteral dilantin:

1. When initiating therapy, especially in acute situations, a loading dose is required.
2. The preferred parenteral route is *slow* intravenous infusion with careful monitoring of EKG and vital signs.
3. Dilantin cannot be diluted with other infusion solutions.
4. Blood level can be clinically monitored by dose related toxic side effects such as nystagmus, ataxia, and lethargy.

References:

1. Easton, J. D., Diphenylhydantoin and Epilepsy Management, *Ann. Int. Med.*, 77:421-424 (Sept.) 1972.
2. Wallis, W., et. al., Intravenous Diphenylhydantoin in the Treatment of Acute Repetitive Seizures, *Neurology* (Minneap.), 18:513-525 (June) 1968.
3. Dam, M., and Olesen, V., Intramuscular Administration of Phenytoin, *Neurology* (Minneap.), 16:288-292, 1966.

Folic Acid Regulations Published

Recently the FDA published a summary of its new regulations concerning the use of folic acid in various multivitamin preparations as well as its use as a separate therapeutic entity. The FDA study concluded that "there is no evidence that doses greater than 1 mg. daily have greater efficacy than do 1 mg. doses." The recommended daily allowance of folic acid that will be permitted in food and dietary supplements (vitamins) will be:

Infants	Up to 0.1 mg.
Children under 4	0.3 mg.
Children over 4 and Adults	0.4 mg.
Pregnant or Lactating Females	0.8 mg.

These rulings by the FDA will undoubtedly lead to reformulation of many available food and vitamin products to lower amounts of folic acid.

The usual therapeutic dose, oral or parenterally, is up to 1.0 mg. daily. In the presence of alcoholism, hemolytic anemia, anticonvulsant therapy, or chronic infection, the maintenance level may need to be increased.

Current literature reveals that there are an increasing number of articles reporting low serum folate levels in long-term users of the oral contraceptives. In one case a woman was admitted to the hospital following the sudden loss of vision. The patient was found to have a severe megaloblastic anemia with unilateral macular hemorrhages and a very low serum folic acid level. The only factor in the history related to low serum folic acid levels was prolonged oral contraceptive use. Recovery followed treatment with folic acid.

Folic acid is commercially available in tablet form and contains no more than 1.0 mg. folic acid per tablet, or solution form suitable for parenteral administration. University of Maryland Hospital carries the following form of folic acid:

Folvite: Injections: 5 mg./ml., 10 ml. vials
Tablets, 1 mg.

Folic Acid is well absorbed orally except in severe cases of intestinal malabsorption and may be also given IM, IV, or SC if the disease is very severe or if there is diminished gastrointestinal absorption.

References:

1. Federal Register 38 (148): 20750 (Aug. 2, 1973).
2. Paton, A., *Lancet*, 1:418 (Feb. 22, 1969).

—Carolyn Love, B.S.

Prophylactic Use of Isoniazid

Recommendations have been published by the Department of Health, Education, and Welfare and the Ad Hoc Committee on Isoniazid and Liver Disease. The following criteria have been established along with other criteria under which persons will receive Isoniazid administered by the Baltimore City Health Department, Division of Tuberculosis Control. The Tuberculosis Surveillance and Control Program of the University of Maryland, Baltimore Campus, shall also adhere to these criteria.

It is recommended that all positive tuberculin reactors considered to be at high risk be prophylactically treated with Isoniazid. Among the highest groups are recent converters (within two years) of any age and household contacts with a positive tuberculin skin test. Following is a list of various clinical situations and the estimated annual risk of each:

1. Household Contacts—All those who have a *positive tuberculin reation 5 mm plus and a negative chest x-ray*. The risk during the first year after discovery of the index case is about 1 in 30.
2. *Recent converters* of any age with a definite 10 mm tuberculin reaction (usually considered to be 0-2 *years*). The risk is about 1 in 30.
3. Persons with previously known tuberculosis, now inactive, who have not had adequate chemotherapy. The annual risk is about 1 in 75.
4. Positive tuberculin reactors with abnormal pulmonary findings in the chest film. The annual risk is about 1 in 125.
5. Positive tuberculin reactors under the age of 22 years. Very young children and teenagers in this group will be a lifetime risk.
6. Positive tuberculin reactors in the special clinical situations as stated:
    a. Adrenal corticoid or immunosuppressive therapy
    b. After gastrectomy
    c. Reticuloendothelial disease such as leukemia or Hodgkins Disease
    d. Severe or unstable diabetes mellitus
    e. Silicosis
    f. A pregnant woman who has inactive tuberculosis previously untreated with antituberculosis drugs or who has roentgenographic findings consistent with inactive tuberculosis should have preventive therapy started in the last trimester and continued for a year.
    g. Children with a positive tuberculin reaction who develop measles or whooping cough or receive measles vaccine should receive eight weeks of preventive therapy if previously treated; the course of preventive therapy should be extended to twelve weeks if they have not been previously treated.
7. All other positive tuberculin reactors *need not receive Isoniazid*. The annual risk is about 1 in 1400.

In addition, there is evidence which suggests that both patients classified as having had previous liver disease and patients who are chronic alcoholics should *not* be placed on Isoniazid without a complete medical evaluation including baseline liver function studies and the ability to carefully monitor the patient on a regular basis.

It is recommended as previously that Isoniazid prophylaxis be monitored on a monthly basis and closely supervised, including constant vigil for signs and symptoms of possible hepatitis such as anorexia, fatigue, rash, and jaundice. Should suggestive gastrointestinal symptoms, skin rash, or signs of jaundice (scleral icterus, dark urine, or light stools) occur, chemical liver function studies including bilirubin, alkaline phosphatase, SGOT, and SGPT should be obtained and the Isoniazid discontinued until these results are available.

It will be noted that it has *not* been recommended to perform baseline liver function chemical studies on the patient who does not have previously demonstarted liver disease or alcoholism. Monitoring the liver function chemical studies during Isoniazid prophylaxis has *not* been recommended routinely except in the patient who develops symptoms suggestive of hepatic involvement.

—Aristides C. Alevizatos, M.D.

Rapid Changes In Temperature May Crack Tooth Enamel

Ice cream and steaming coffee may sound like a pleasant way to end a meal, but the combination may be harmful to your teeth.

The rapid change of temperature that occurs when the two are combined can crack the tooth's enamel, according to a dentist writing in *Today's Health*. Enamel expands and contracts at a different rate than the layer of dentin underneath, according to Alfred E. Seyler, DDS. Hot drinks are usually about 140 degrees F, whereas ice cream is about 10 degrees F, Dr. Seyler reports, and "that much sudden change can be very harmful to the teeth."

According to the published studies, heat and cold also may create a less severe although sometimes highly painful problem for persons who suffer tooth hypersensitivity. Wincing pain may accompany hot or cold foods, drinks and air. Home treatment with a therapeutic dentifrice such as Sensodyne can relieve this sensitivity with continue use. According to *Journal of Periodontology*, May-June 1964; *Periodontics, Nov.-Dec.*, 1967; and other studies.

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Scientists Develop New Guide To Renal Failure Drug Therapy

Three scientists have culled from 472 references what is known about current renal failure therapy with commonly-used drugs, and have compiled a comprehensive guide that can be used to plan such treatment rationally.

Patients with impaired renal function often require major adjustments in dosage of common therapeutic agents to avoid adverse reactions or further renal damage because of reduced or absent renal excretion of these drugs. This exhaustive literature search has now provided a practical guide to pharmacological management of adult patients in this category, particularly those undergoing regular periodic dialysis.

Drugs are listed in alphabetical order in five tables, either individually by generic name or under subdivisions based on the major type of pharmacologic action. The tables suggest maintenance dosage intervals for common drugs used in patients with renal insufficiency. If information about a specific drug is unavailable, emphasis is given to its biological half-life, normal pharmacology, and creatinine clearance for modification of usual dose schedules.

Maintenance dosage interval recommendations are based on excretion or metabolism of the drug, as well as on the normal biological half-life in hours, and its prolongation with various degrees of renal failure. The qualitative effect of dialysis on drug removal is recorded, as is the type of dialysis employed: hemodialysis, peritoneal dialysis, or both. Nephrotoxic or adverse effects specifically related to renal failure are noted, and adjustments for concurrent dialysis are suggested.

The drug tables are designed to provide the clinician with rough guidelines on which to base safe and effective therapy, but not as a substitute for clinical judgement. The tables will require constant reappraisal to ensure adequate therapy without toxicity, as well as periodic revision to incorporate information about new drugs and newer data about old drugs.

The extensive bibliography is available from the authors: Cecil J. Coggins, M.D., of Massachusetts General Hospital, William M. Bennett, M.D., of the University of Oregon Medical School, and Irwin Singer, M.D., of the University of Pennsylvania School of Medicine. They reported their findings in the *Journal of the American Medical Association,* December 16, 1974. Dr. Coggins is a grantee of the National Institute of Arthritis, Metabolism, and Digestive Diseases.

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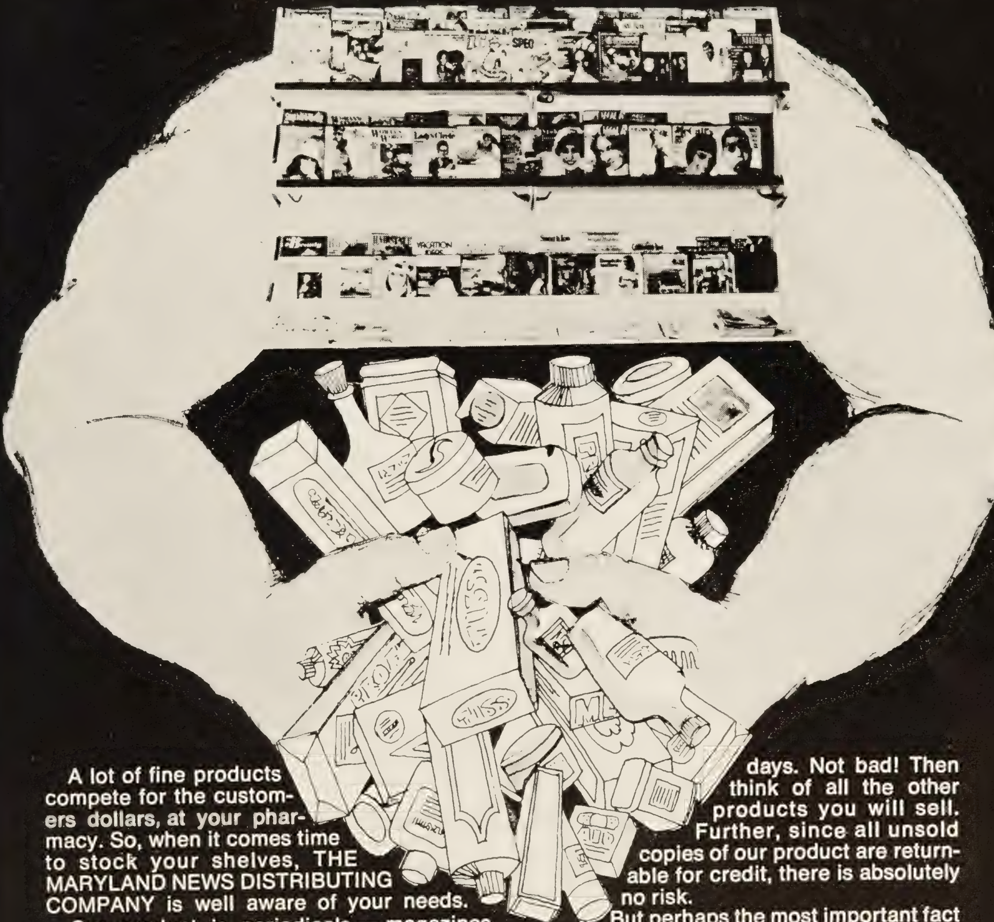

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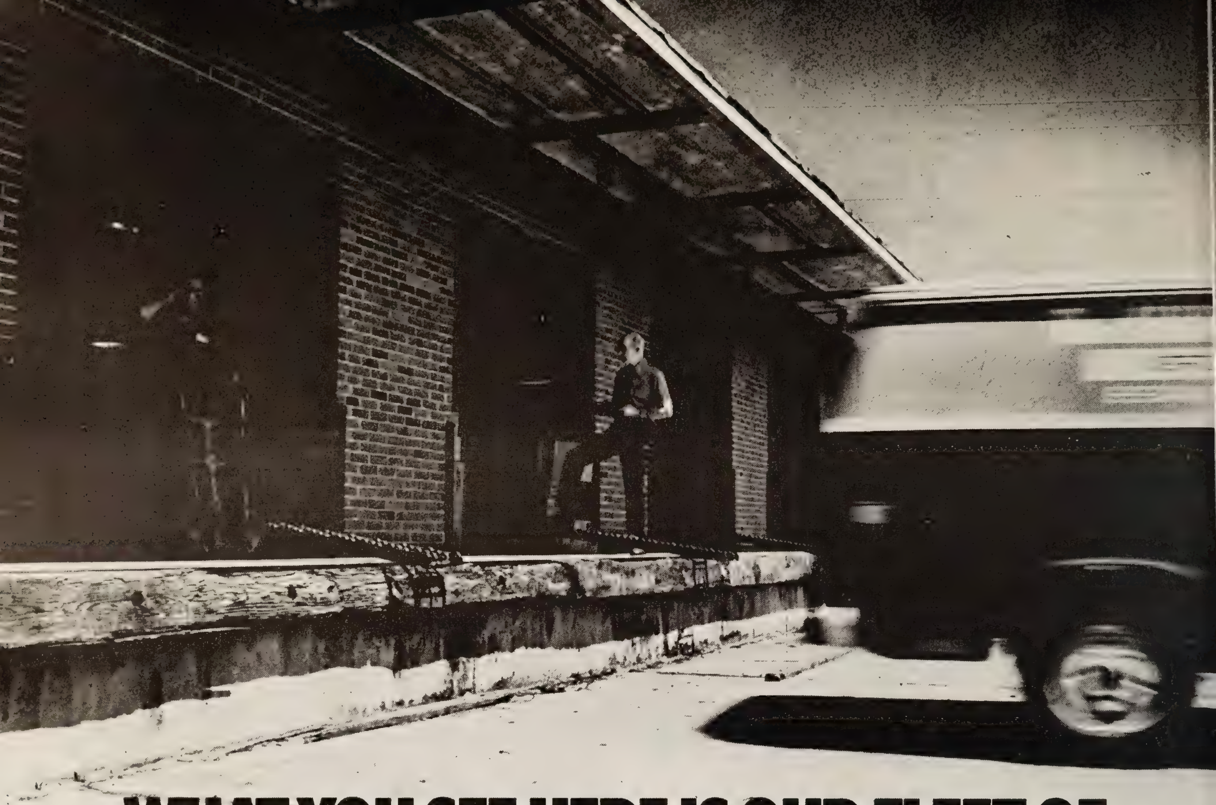

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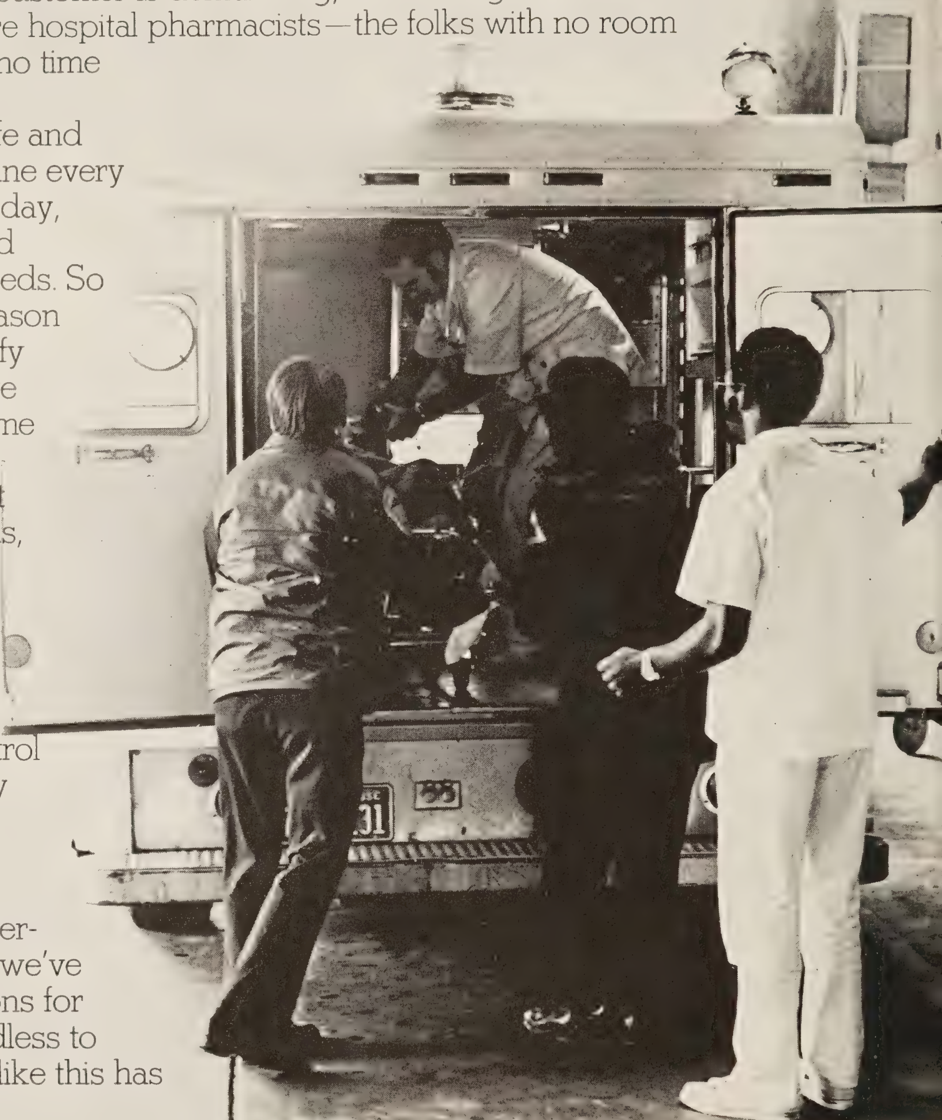

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DEATH CLAIMS SIMON SOLOMAN AND NORMAN J. LEVIN

LEADERS OF PHARMACY IN THE STATE OF MARYLAND

Two of Maryland's pharmacy leaders and spokesmen over the years, Simon Solomon and Norman Levin died within a few days of each other in late November. Simon Solomon, who was known throughout the profession in Maryland as the "Sage of Pharmacy," died November 21 at the age of 79. Norman J. Levin, past president of the MPhA and a three-term member of the Board of Pharmacy died November 21. He was 57. In his own way, each man left an impression on the profession and on the practice of pharmacy in Maryland.

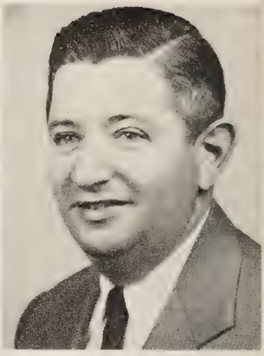
A TRIBUTE TO SIMON SOLOMON

What can one say on the death of a colleague who stood so high above his contemporaries as a human being as well as in professional standing? In the case of Simon Solomon perhaps we can do best by updating what we wrote in the brochure of the first Simon Solomon Pharmacy Economics Seminar, held November 1, 1962:

> "In naming the Pharmacy Economics Seminar in honor of Simon Solomon, the Maryland Pharmaceutical Association is recognizing the outstanding contributions of Mr. Solomon to the advancement of the profession of pharmacy. For more than three decades, he has devoted himself wholeheartedly to both the professional and economic affairs of pharmacists.
>
> Simon Solomon graduated from the University of Maryland School of Pharmacy in 1918. "Si" Solomon has been in community pharmacy since his Army service in World War I. At one time he, together with his late twin brother, Sam, operated three pharmacies.
>
> He served as president of the Alumni Association, University of Maryland School of Pharmacy, in 1931-32, president of the Baltimore Retail Druggists Association, now Baltimore Metropolitan Pharmaceutical Association, in 1934 and as a vice-president of the National Association of Retail Druggists in 1936. He was Honorary President of MPhA in 1957.
>
> Among his foremost activities were his efforts in the enactment of Fair Trade legislation in Maryland. From 1935 he served as Chairman of the Fair Trade Committee of the Maryland Pharmaceutical Association for 35 years. He was elected to the Rho Chi Honor Pharmacy Society and received the

Continued on Page 30

Simon Soloman



Norman J. Levin

NORMAN J. LEVIN

Norman J. Levin was the owner and operator of Field's Pharmacy in Pikesville, Maryland, one of Maryland's outstanding community pharmacies. He had purchased Field's in 1946 following his discharge from the U.S. Army.

Mr. Levin had served on the Board of Pharmacy from 1958 to 1973, completing his service with the Board as its chairman. He was president of the MPhA in 1961-62, was a past president of the Alumni Association of the University of Maryland School of Pharmacy, and was recipient of the Robins Bowl of Hygeia award in 1965 for Community Service Mr. Levin was a fund-raiser for charitable and cultural organizations and headed the pharmaceutical division of the Associated Jewish Charities of Baltimore. Active in the affairs of his faith, Mr. Levin had been instrumental in the establishment of a branch of the Chizuk Amuno congregation, which met in the Pikesville Armory until establishing permanent facilities.

A native of Baltimore, he was a graduate of City College and the pharmacy school at Maryland.

He served in the Army during World War II, rising from private to the rank of captain.

A member of the Amicable Lodge of the Masons and the Suburban Club, he was also a member of the advisory board of the Pikesville Branch of the Maryland National Bank and had served as president of the Pikesville Merchants Association.

He is survived by his wife, the former Ruth Singer, a son Jeffrey L. Levin of Pikesville, a daughter, Susan R. Levin, of Boston; his mother Mrs. Esther Berman, of Baltimore; two sisters, Mrs. Jeannette Rothstein and Mrs. Hilda Weinstock, both of Baltimore, and two brothers, Pharmacist Harold P. Levin and Irving Berman, also both of Baltimore.

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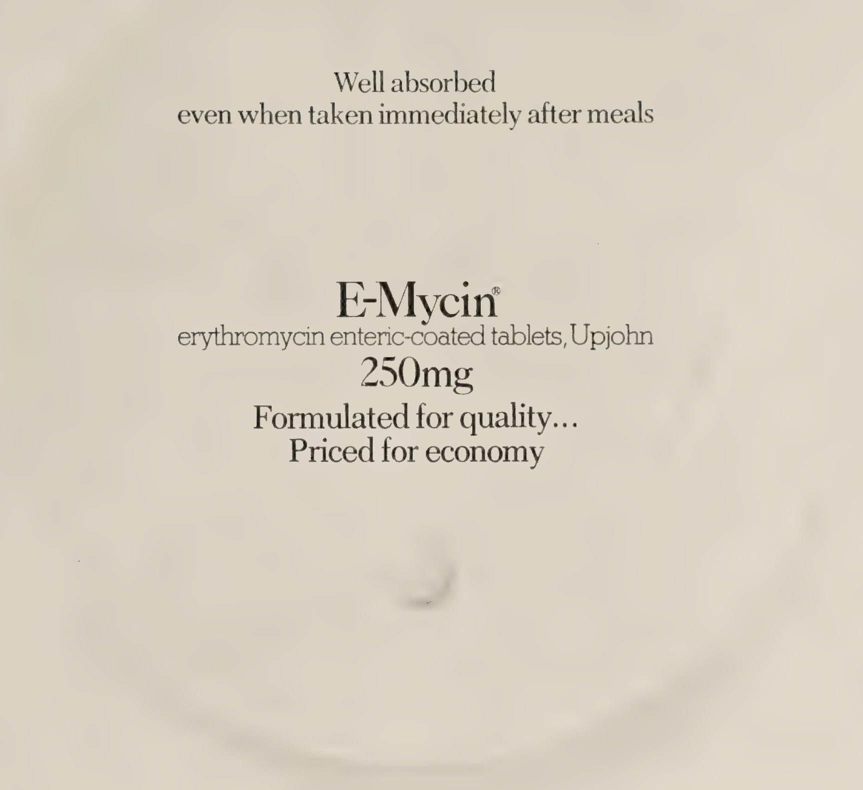

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editorial

A REFLECTION ON PHARMACISTS SIMON SOLOMON AND NORMAN J. LEVIN

The following remarks were made at the opening of the 1975 Simon Solomon Pharmacy Economics Seminar on November 25.

On Saturday, November 8, a little more than two weeks ago I visited Norman J. Levin, a past president of MPhA, in his pharmacy. I told him that I was breaking a promise I had given to Si Solomon. Si had called to tell me he was in the hospital for a "check up" as he was not eating well, losing weight and somewhat fatigued. He extracted a promise from me to tell no one. I told Norman that Si would be 80 years on March 26, 1976 and that that milestone should be observed in a suitable manner such as by a special luncheon or dinner open to all who wished to participate. Furthermore, that his friends and admirers should be given the opportunity to contribute so that a portrait painting could be commissioned for hanging in the Kelly Memorial Building, headquarters of the MPhA and pharmacy in Maryland. Norman agreed to serve as chairman, we drew up a committee list and set a meeting date. On November 13, the MPhA Board of Trustees authorized the project under MPhA auspices.

Who was Simon Solomon—known to all as Si? Of course many knew that Si was dedicated wholeheartedly and completely to the welfare and advancement of his beloved profession of pharmacy. But more importantly, he was dedicated to the welfare of his fellow man—all men. For more than a generation, whenever a pharmacist had a problem they sought Si's counsel and assistance. Many a pharmacist still practicing today is doing so only because Si became his advocate. He was generous and compassionate, charitable and faithful. No one he could possibly help was ever turned away.

Yes, he held offices and received honors, none of which he ever sought. He set a record of service in the Maryland Pharmaceutical Association and Board of Trustees, serving continuously since 1939. He was chosen as the first and only Honorary Life Trustee. Previously he had been president of the Baltimore Retail Druggists Association, BMPA, and vice president of the NARD (National Association of Retail Druggists), declining to move up the ladder to president. He was the first Board of Hygeia recipient for the Maryland Pharmaceutical Association. But enough of this.

It was the nobility of character, the integrity, the unselfish devotion to family, community and profession which gained him the respect of all and enmity of none.

Those who grew up in the Depression can appreciate what "Fair Trade" laws did for the little guy on the corner. Si was "Mr. Fair Trade" of Maryland, responsible more than any other man for the Maryland law, for the maintenance of contracts, and for keeping the law on the books. He ran the Fair Trade Bureau for years without pay and often at his own expense.

When welfare prescriptions were launched under "Medical Care" in the 1940's, he processed the prescriptions for his colleagues without compensation either governmentally or privately. When funds were needed to build the Kelly Memorial Building he became the fund-raising chairman.

I was one of the many fortunate ones who worked closely with Si. If one meets just one person like Si during his lifetime it is a miracle. I regret that I cannot summon the words to adequately convey the unique and rare qualities of this wonderful human being. His humanity, his truly human qualities were matched by no one else I have known in pharmacy.

On Friday, November 21, Si Solomon died and was buried Sunday. Saturday Norman Levin, his good friend, died and was buried yesterday. Norman, a past president of the Maryland Pharmaceutical Association, three-term member and president of the Board of Pharmacy, the owner of one of the outstanding and best known community pharmacies, was also one of the giants of Maryland Pharmacy. His death was a great loss to pharmacy and to me personally. Our tenure at the University of Maryland School of Pharmacy overlapped. We both entered the Army before Pearl Harbor, were on the same military orders and on the same train going to Texas where we were classmates at the Medical Administrative Corps Officers Candidate School, and were commissioned together in December 1942.

In the area of pharmaceutical and managerial leadership, Norman Levin will be hard to replace.

And so I feel that an era has ended. But the seminar in Pharmacy Economics and Management founded by MPhA in 1962 to honor Simon Solomon will continue to contribute to the necessary continuing education for pharmacists for years to come. This Seminar under MPhA sponsorship will be a constructive memorial of learning for pharmacists that will perpetuate the name of a great human being in the annals of pharmacy.

Let us stand in a moment of silent tribute to Simon Solomon and Norman J. Levin.

Nathan I. Gruz

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MARYLAND PHARMACEUTICAL ASSOCIATION MINUTES OF THE BOARD OF TRUSTEES

Kelly Memorial Building
October 9, 1975

The meeting was called to order at 10:15 A.M. by Chairman Paul Freiman.

1. Officers' Reports
   a. President Seidman—Many members have returned their committee interest forms. Conferred with legal counsel Joseph Kaufman and MSHP officers on mutual problems. A conference along with Executive Director Gruz was held with officers of TAMPA for increasing cooperative efforts between the two groups. Activities included attendance at Upper Bay Pharmaceutical Association, to the Maryland area meeting of the ASCP (American Society of Consultant Pharmacists), BMPA, Legislative and Membership Committees. Was contacted by the Baltimore County Cancer Society regarding prescription drug program. Was also invited to attend the Maryland State Dental Association meeting.

   b. Treasurer's Report was received and reviewed.

   c. Executive Director's Report—Painting and renovating the Kelly Memorial Building was started. The BMPA approved the appropriation of $5,000 to assist in funding an administrative assistant. A parttime assistant has been employed to assist in the journal and public relations. Past month's activities included attendance at the Affiliated State Pharmaceutical Association Executives meeting at APhA, the BUST program against crime, the TIPS insurance program, TAMPA officers, Maryland area meeting of ASCP, BMPA meeting, Upper Bay Pharmaceutical Association meeting, Maryland Society of Association Executives, Standards of Practice Committee, Medical Society Joint Practices Committee, Wedgwood Club 25th Anniversary Banquet, Simon Solomon Pharmacy Economics Seminar, Pharmaceutical Services Foundation regarding prepay contracts, BMPA committees, Legislative Committee, meeting to launch the School of Pharmacy continuing education Self-Study Program, Membership Committee and legal counsel. Notice of a Federal Trade Commission hearing in Washington on January 12 on Prescription drug advertising regulations was received. Board of Canvassers met and certified the following results of the mail ballot for officers and trustees for 1976–77 year. For Vice President: James W. Truitt, for Treasurer: Anthony G. Padusssis, for Board of Trustees—3 year terms: Ronald Lubman and S. Ben Friedman. Attended Board of Pharmacy meeting. Federal Trade Commission has ordered a ban against drug chain lease restrictions. At the local area meeting of ASCP took the position that the group should work through MPhA in seeking the necessary changes in all the pharmacy service regulations of Medicaid. At the Affiliated State Pharmaceutical Association Executives meeting in addition to membership and administrative matters, was briefed on HEW items such as MAC regulations, health service areas, HMOs, PSROs. Also heard reports on physician assistants, drug product selection, FDA bioavailability, health manpower legislation and others.

2. The request for affiliation by the Upper Bay Pharmaceutical Association was approved.

3. *Mempership Committee Report*—Paid up membership is 55 ahead of same time in 1974. Elwin Alpern reported on the first meeting of the committee. The recommendation for a prize contest and a membership campaign was approved.

4. *Legislative Committee*—Richard D. Parker reported on a meeting held on September 30 with the following recommendations:

   a) To support a drug product selection bill with a negative formulary to replace current state law. Approved by Board.

   b) *Continuing Education*—The Tripartite Committee and the MSHP have approved a draft of a bill for a "Council on Pharmaceutical Continuing Education" to consist of 5 persons, one named by the Board of Pharmacy, one named by the Dean of the School of Pharmacy and three by the Maryland Pharmaceutical Association, one of which would be an institutional pharmacist (recommended by the Maryland Society of Hospital Pharmacists). Approved by Board.

   c) *Pharmacy technicians or aides*—It was recommended that a listing of what only a pharmacist can perform should be sought to be established with regulations of the Board of Pharmacy. As to pharmacist-in-charge regulation, this can be done by the Board of Pharmacy under Section 249. A motion for regulations to be drafted with legal counsel on pharmacist and technician duties for promulgation as regulations by the Board of Pharmacy was approved.

   d) *Mandatory Patient Profiles*—a meeting was held with Delegate Timothy Hickman who has a draft proposal for a mandatory patient profile law.

e) Composition of the Maryland Board of Pharmacy—The Board of Pharmacy has requested the Department of Health to introduce a bill for an increase of one pharmacist and one consumer member for a total of seven.

f) Prescription Price Advertising bills introduced by Senator Steers (SB 13) and Delegate Brown (HB 53). It was agreed that MPhA oppose these bills on the basis of the passage of the prescription price posting bill which will be effective January 1 and the need to see how the new law will work.

g) Co-pay and third party bills. Consensus was to oppose the Senate Bill 832 type of legislation as drafted.

h) On the mandatory patient profile bill, the consensus was that the Board of Pharmacy could promulgate regulations on mandatory patient profiles and therefore legislation was not necessary.

4. *Standards of Practice Committee*—Melvin Rubin—The work of the committee was basically discussed with the legislative committee report.

5. *Prescription Insurance Programs*—Melvin Rubin reported that the OTC drugs may be cut off. As a pilot program, chains are submitting tapes on Medicaid prescriptions in place of the prescriptions themselves. Mr. Gruz reported on a prepay group called Chesapeake Physicians with whom he met along with Mr. Bookoff, President of PSF. Director Gruz reported on meeting of Medical Assistance Advisory Committee at which tentative proposals were presented for cost containment because of an anticipated deficit in the Medicaid budget in fiscal 1976.

6. *Board of Pharmacy*—Robert Snyder reported on status of regulations for posting, security of a pharmacy service area and a new equipment list.

7. APhA action on Federal Trade Commission subpeona on pharmacy ownership files. It was resolved to commend APhA for its action.

8. American Society of Consultant Pharmacists, Maryland area group. A motion to permit the group to raise money in the name of Maryland Pharmaceutical Association to employ an outside lobbyist in order to obtain a per patient per diem payment for pharmacists servicing nursing homes was defeated. The consensus was in favor of the reimbursement concept, but to urge the group to work with Maryland Pharmaceutical Association and turn any funds raised by the group for the above purpose to MPhA and to declare MPhA's willingness to meet and work with them on this problem.

9. American Society of Internal Medicine-APhA guidelines on prescriptions was endorsed.

The meeting was adjourned at 2:00 P.M.

NEW MEMBERS

The following new members were approved:

Morton Cohen, Baltimore

Irving Shochet, Baltimore

Chung Park, Silver Spring

Bernard McDougall, Sykesville; and

Marc Greene, Irvington, New Jersey

maryland board of pharmacy

Pharmacy Changes

The following are the pharmacy changes for the month of October:

New Pharmacies

Dart Drug Corporation #230, Herbert Haft, President; 417 South Jefferson Street, Frederick Maryland 21701.

Changes of Ownership, Address, Etc.

Marcus Pharmacy, Inc., Michael Marcus, President; 2021 West Pratt Street, Baltimore, Maryland 21223. (Change from individual ownership to corporation).

Broadway Pharmacy, Inc., Arnold Grabush, President; 1645 East Baltimore Street, Baltimore, Maryland 21231. (Change from Partnership to corporation)

No Longer Operating As Pharmacies

Dart Drug Corporation, Carrollton, Herbert Haft, President; 1645 East Baltimore Street, Baltimore, Maryland

Dart Drug Corporation, Carrollton, Herbert Haft, President; 8321 Annapolis Road, New Carrollton, Maryland 20784.

ALUMNI DINNER MEETING

March 21, 1976

Martin's West

Guest Speaker: Irving Rubin, Editor
Pharmacy Times: "Ten Predictions for Pharmacy for 1980"
Presentation to Dr. J. Paul Briggs, Honorary President Alumni Association

For reservations, mail check for $10 each to:
Milton A. Friedman, 12 Hollow Oak Court, Baltimore, Md. 21208. Telephone 484-4656, or contact Henry G. Seidman at 528-7589/7118 or Dorothy Levi 653-1657.

MARYLAND PHARMACEUTICAL ASSOCIATION FALL REGIONAL MEETING MINUTES

October 29, 1975
Center for Adult Education
College Park

The meeting was called to order at 9:45 A.M. by President Henry G. Seidman, who brought greetings and reported on his activities.

Executive Director Nathan I. Gruz presented his report on activities since the previous meeting. He emphasized the need for participation by all members in the forthcoming membership campaign to increase membership.

Paul Reznek brought up the matter of the Federal DEA (Drug Experiment Administration) position against federal bills making certain crimes in pharmacies a federal offense. Mr. Bernard Lachman is serving as representative of APhA as liaison to the DEA.

The meeting of the House of Delegates was then called to order by the Speaker, Irvin Kamenetz. Secretary Gruz reported a quorum present. The minutes of the previous House of Delegates meeting at the Annual Convention was approved on motion of Mr. Friedman, seconded by Mr. Lindenbaum.

The treasurer, Morris Lindenbaum, presented his report which was received.

The Legislative Committee report was presented by Chairman Richard D. Parker with recommendations for 1975-76. There was discussion of proposals for negative formulary and mandatory patient profile bills. The report of the Prescription Insurance Committee was submitted by Melvin Rubin. There was discussion of some of the problems of medical supplies and pre-authorization. It was felt that pre-authorization should be limited to a hundred days instead of the current 90 days supply.

Report of the Pharmacy Practices Committee, Melvin Rubin, Chairman, was distributed. Mr. Friedman moved for approval of the report, seconded by Mr. Lubman. On motion of Mr. Freiman duly seconded, the motion was tabled until the afternoon session. On motion of Mr. Freiman, seconded by Mr. Friedman, the report of the Legislative Committee was tabled until the afternoon.

Convention Trip Chairman Lubman reported on the status of the forthcoming trip to Mexico. He announced a joint meeting with the Maryland Society of Hospital Pharmacists on January 8.

Tripartite Committee. Paul Freiman, representative, reported on a Continuing Education Bill which was agreed upon by the Tripartite Committee and the MSHP. On motion of Mr. Pelissier, duly seconded, the agreement was approved.

Finance Committee, Stanley J. Yaffe, Chairman, reported that expenditures were going approximately according to budget projections for the year, but much more revenue will be needed in 1976.

There was then discussion on the Board of Pharmacy proposals for regulations to permit prescription area of pharmacy to be closed while the rest of the establishment is open. There was also a discussion of some of the problems involving the use of safety closures. A recess for lunch was followed by the presentation of the Squibb past president's award to Paul Freiman by John Bringenberg of Squibb.

Mr. Parker moved for support of legislation to amend Rx price posting law to state only the sign issued by the Board of Pharmacy may be posted and only in the Rx service area. Seconded and passed.

Report of the Pharmacy Practices Committee, Melvin N. Rubin, Chairman. The Pharmacist-in-Charge recommendation was adopted under the legislative report. A recommendation for a one-to-one ratio of pharmacy aide to pharmacist was approved on motion of Mr. Friedman, duly seconded. Mr. Friedman moved for adoption of the following:

"MPhA should adopt following policy on professional duties which must be carried out expressly and solely by registered pharmacist. All these functions are expressly prohibited by others, except a pharmacy student or extern under the direct and immediate supervision of a pharmacist.

1. *Only the pharmacist may certify original prescription order.* Certification involves a number of responsibilities such as determination of (1) whether or not it is a legal prescription order, (2) whether or not dose is correct and other matters related to dose, (3) frequency of prescribing, drug interactions, possible allergies, and incompatibilities, based on medication history of the patient and such medication records as are available.
2. *Only the pharmacist may receive an oral prescription from person authorized to transmit a prescription order. Pharmacist must personally reduce this to writing.*

MPhA Fall Regional and House of Delegates Meeting

1.

2.

Page 1—Left to Right

1. **Henry G. Seidman,** *MPhA President;* **Irvin Kamenetz,** *Speaker, MPhA House of Delegates; Executive Director,* **Nathan I. Gruz.**
2. **Richard D. Parker,** *Vice President and Legislative Chairman.*
3. **Ronald Lubman,** *Convention Chairman and BMPA President-Elect.*
4. **Elwin Alpern,** *Membership Committee Chairman.*
5. **Melvin Rubin,** *MPHhA President-Elect.*
6. MPHA House of Delegates in session.

3.

5.

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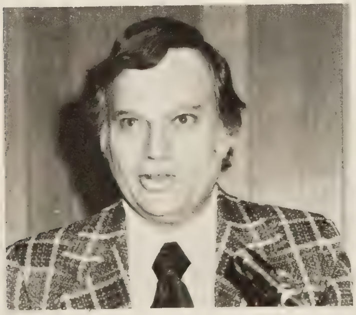

6.

7.

7. MPhA House of Delegates in session.

8. *Delegate* **Timothy R. Hickman** (D. 13th—Baltimore County) of the Maryland General Assembly addressed MPhA House of Delegates on his proposed legislation to require pharmacists to maintain patient medication profiles.

9. *Board of Trustees Chairman* **Paul Freiman** (right) recieved the Squibb Past President's Award as *President* **Henry G. Seidman** presided.

University of Maryland Center of Adult Education
College Park, Maryland
October 29, 1975

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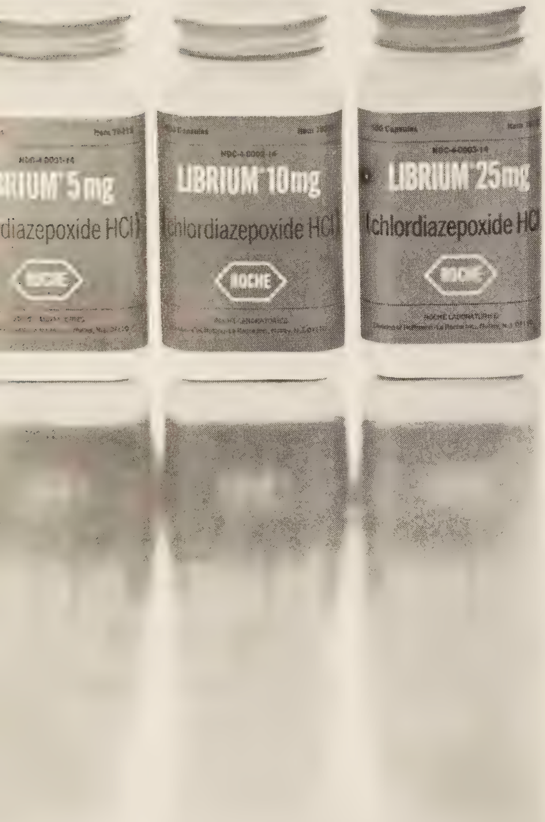

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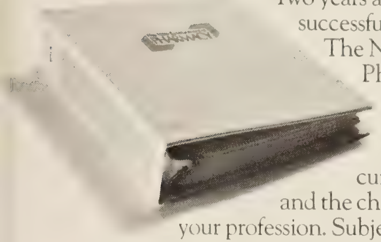

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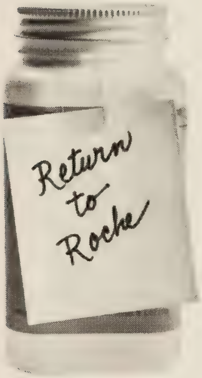

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Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy.

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Reduces chest congestion
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Contains no sedatives
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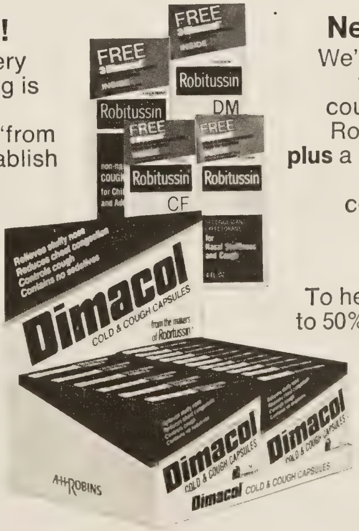
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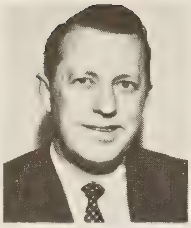

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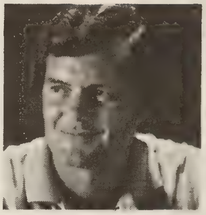

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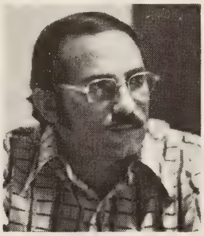

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institutional pharmacy

The following reports are excerpted from "PHARMACY BULLETIN", The Union Memorial Hospital, Baltimore, Maryland.

PHOTOSENSITIVITY-DRUG INDUCED (REVISITED)

Drug photosensitivity may be defined as adverse reactions manifested by the skin as a result of combined exposure to certain drugs, chemicals, or foods with sunlight. *Phototoxic drug reactions* are those which can be elicited in almost everyone under the proper conditions. This reaction is characterized by an exaggerated sunburn with or without painful edema. The reaction occurs five to eighteen hours after exposure to the sun. *Photoallergic drug reactions* can be considered to be an acquired and altered capacity of the skin to respond to light energy in the presence of a photosensitizer. These are presumed to be dependent upon antigen-antibody relationship or a cell-mediated delayed hypersensitivity response. The clinical manifestations of a photallergic response may range from eczematous or papular lesions, appearing 24 or more hours after sun exposure, to acute urticarial lesions developing within a few minutes after exposure. *Photoaugmented drug reactions* occur when ultraviolet light potentiates the reactivity of the skin by means of a direct effect on cellular components that make them more vulnerable to contact dermatitis.

Therapy of acute phototoxic reactions induced by either topical or systemic agents is best achieved by removal of the offending agent and avoidance of exposure to the sun. Usual dermatological procedures for reducing inflammation may be undertaken. Patients who cannot discontinue their medication should be advised to limit exposure to direct sunlight to before 10 a.m. and after 4 p.m. Within a week after discontinuation of sun and drug the problem generally subsides.

Patients sensitized by exogenous agents (particularly halogenated salicylamides and certain antifungal drugs) occasionally become persistent reactors to light and may remain sensitive to the sun for months after cessation of detectable exposure to the photosensitizing drug. Even minimum exposure through window glass of less than thirty minutes duration or exposure to overhead fluorescent light can induce severe eczematoid reactions.

Application to the skin of a sunscreen or an agent that will scatter, absorb or reflect offending wave lengths of light. Many commercial products with Para-aminobenzoic acid (PABA), in varying concentrations, or derivatives are used as sunscreening agents, primarily for melanin stimulation and not for protection from photosensitivity reactions.

To best protect oneself from photosensitivity reactions what is needed is an ultraviolet and visible light-absorbing chemical that adheres to the skin and is not easily removed by sweating, swimming, or contact with clothing. Patients should be advised to reapply the substance after excessive sweating or immersion in the water. The PABA, 5% in alcoholic solution, is ideal when the skin has no eruptions or erythematous reaction and prolonged protection is desirable for avoiding the recurrence of photosensitivity reactions.

There are systemic and contact photosensitizers. Systemic sensitizers include the Tetracycline antibiotics (some with lesser tendency than others to cause reactions); Phenothiazines such as Chlorpromazine (THORAZINE), Promethazine (PHENERGAN), Promazine (SPARINE), Trifluoperazine (STELAZINE), etc.; Griseofulvin; oral contraceptives; Sulfonamides such as Sulfisoxazole (GANTRISIN), etc.; Thiazide diuretics such as Chlorothiazide (DIURIL), Hydrochlorothiazide (HYDRODIURIL, ESIDRIX, ORETIC); Chlordiazepoxide (LIBRIUM), just to name a few. Contact sensitizers include hexachlorophene, halogenated salicylamides (deodorant bacteriostatic agents in soaps), essential oils (bergamot, lime, cedar, lavender, citron sandalwood), cosmetic dyes, coal tar derivatives used in the treatment of psoriasis and chronic eczema, 5-Fluorouracil, an antineoplastic agent and many others. A paradoxical reaction occurs with lower concentration solutions of PABA producing photallergic reactions in contrast to the higher concentration (5%) solutions of PABA being effective sunscreening agents.

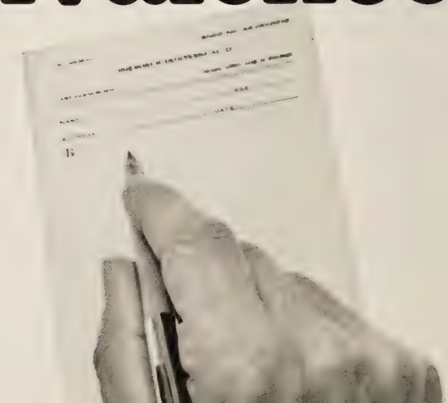
In addition to the above described photallergic and phototoxic reactions the following may result from systemic or contact sensitizers and exposure to the sun: burning sensation, itching, acceleration of inflammatory process, marked erythema, vessicles, bullae, hyperpigmentation, hives, etc. Cross photosensitization is a common occurence.

References:

1. Stempel, E. and Stempel, R.—"Drug-Induced Photosensitivity", JAPhA 13:4 (April) 1973
2. Adverse Drug Reactions—HAZARDS OF MEDICATION, first edition p349–350
3. Silverman, H. M.; Hosp. Formulary Manag., p 31, 32, 45, (May) 1974

Note: Heretofore unexplained and unsuspected reactions are now more readily identified and more easily treated with the benefit to risk ratio as a guide to rational therapy.

Bioequivalence



the weight of scientific opinion:

Are drug products equally safe and effective simply because the chemical content is the same?

Definitely not, unless bioequivalence tests and other quality assurance checks have been conducted. The pharmaceutical industry and many scientists have maintained this position for years, but others have questioned it. Now the Office of Technology Assessment of the Congress of the United States has reported on the issue in its Drug Bioequivalence Study.*

Here are a few definitive statements in the O.T.A. report:
"...the problem of bioinequivalency in chemically equivalent products is a real one. Since the studies in which lack of bioequivalence was demonstrated involved marketed products that met current compendial standards, these documented instances constitute unequivocal evidence that neither the present standards for testing the finished product nor the specifications for materials, manufacturing process, and controls are adequate to ensure that ostensibly equivalent drug products are, in fact, equivalent in bioavailability.

"While these therapeutic failures resulting from problems of bioavailability were recognized and well documented, it is entirely possible that other therapeutic failures and/or instances of toxicity that had a similar basis have escaped attention."

DRUG
BIOEQUIVALENCE

A REPORT OF THE
OFFICE OF TECHNOLOGY ASSESSMENT
DRUG BIOEQUIVALENCE STUDY PANEL

The Pharmaceutical Manufacturers Association supports federal legislative amendments that would require manufacturers of duplicate prescription pharmaceutical products, subject to new drug procedures, to document:
(a) chemical equivalence; and
(b) biological equivalence, where bioavailability test methods have been validated as a reliable means of assuring clinical equivalence; or
(c) where such validation is not possible, therapeutic equivalence.

In addition, the PMA supports federal legislation that would require certification of all manufacturers of prescription products before they could start in business, annual inspections and certification thereafter, and strict adherence to FDA regulations on good manufacturing practices.

The overall quality of the United States drug supply is excellent. But only a total quality assurance program, envisaged in these and other policy positions adopted by the PMA Board of Directors in 1974, can bring about acceptable levels of performance by all prescription drug manufacturers and thereby assure the integrity of the prescriptions you dispense...

P·M·A

Pharmaceutical Manufacturers Association
1155 Fifteenth Street, N.W.
Washington, D.C. 20005

protecting the integrity of the Rx's you dispense

*Copies of the complete report on Drug Bioequivalence may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

LAMPA NEWS

Three different activities were on LAMPA's schedule for its Fall Regional Meeting, held October 29, 1975.

Enjoying beautiful autumn weather, LAMPA members and guests traveled to Washington, D.C. by chartered bus for a conducted tour of the new FBI Building. Enroute, gimmicks and surprises kept everyone interested. Many of the prizes were in the harvest theme—pumpkins, dried Indian corn, gourds and dry flowers.

It was noted with pride, four male pharmacists joined their LAMPA wives on this trip. They were: Al Ohlendorf and Mickie, Sam Jeppi and Marie, Lee Rettaliata and Nellie, and Dick Crane and Ann. We can also boast one member, Zelda Wiener, who brought her mother, Sylvia Mazer and her mother-in-law, Rose Wiener. Past president, Dora Rockman not only assisted at the Reisterstown Road pick-up, but also received the "early bird" prize, for making the first reservation. Honors for bringing the most guests went to Membership Treasurer, Rose Wiener. We were happy to have "first timers"—Miriam Kamenetz and Norma Fedder, with us.

For lunch we joined the MPhA members in the Chesapeake Room of the Adult Learning Center on the campus of the University of Maryland at College Park, Maryland. It was a gracious setting for a delicious lunch. We understand the dessert—ice cream—was made on the campus by the students.

Paul Freiman, immediate past president of the MPhA was presented with a Delft Mortar and Pestle by John Bringenberg of the E. R. Squibb Company, in recognition of his service to pharmacy. A short address by Delegate Timothy Hickman on Patient Medication Profiles concluded the lunch-time activities.

A short LAMPA business meeting followed, during which the Baklava recipe, demonstrated at our Convention Meeting, was distributed; a free ticket to the Pharmacy Alumni Association Oyster Roast was won by Barbara Glaeser and plans were announced for another meeting, in January, at the Yardstick Fabric Shop.

A fascinating demonstration, on memory, was given by Annette Padussis Kassolis, assisted by one of her students. Everyone attending was impressed and interested by the results that can be obtained with systematic programming of your memory. Annette Kassolis is the daughter of Anthony, and LAMPA president, Arlene Padussis.

ANN CRANE

BMPA ANNUAL MEETING

Baltimore Metropolitan Pharmaceutical Association Annual Meeting Thursday, November 20, 1975

The Annual Business Meeting of the Baltimore Metropolitan Pharmaceutical Association was called to order at 9:30 P.M. by President John Padousis. After greetings and a short report by the President, the Executive Director Nathan I. Gruz gave his report. He emphasized the great supportive role of the BMPA to the Maryland Pharmaceutical Association in the areas of legislation, standards of pharmacy practice and third-party health insurance programs. BMPA has also been active in the BUST (Businessmen United to Stop Trouble) organization which provides awards to persons giving tips involving crimes against pharmacies and other establishments. The forthcoming Millis Commission report on future role of pharmacists and the forthcoming membership campaign was reported.

The Treasurer's report was presented by Charles E. Spigelmire. After discussion the report was accepted.

Ronald Lubman, Chairman of the MPhA Convention, reported on the MPhA trip to Mullet Bay in the Netherlands Antilles St. Maarten which replaced the trip to Mexico which was cancelled. He also reported on the joint MPhA/MSHP meeting to be held at the University of Maryland Health Sciences Library Auditorium in January.

Committee Reports

Elwin Alpern reported on the membership committee activities which is planning a vigorous campaign for 1976.

Melvin Rubin and Paul Freiman reported on legislation of interest. It was pointed out that there will again be bills to repeal prescription price advertising laws.

Melvin Rubin outlined the report of the Pharmacy Practices Committee which is working to develop standards.

New Business

Chairman Rubin presented the report of the Nominating Committee as follows: President-elect: Stanley J. Yaffe; Vice Presidents: Samuel Lichter, Ralph Quarles, Milton Sappe; Treasurer: Charles E. Spigelmire; Secretary: Nathan I. Gruz; Executive Committee (2 year terms): Elwin Alpern, Barry Bloom, James Culp, Bernard N. White will join Marvin A. Friedman, Barry E. Levin, Martin B. Mintz and Richard E. Myers who are currently serving on the Executive Committee.

There being no nominations submitted from the floor, the nominees were elected by unanimous ballot.

Paul Freiman, past president of BMPA, discharged the 1975 officers and installed the new officers and executive committee. John Padousis will serve as chairman of the executive committee for 1976.

Dick Zietz of TIPS, Total Insurance Programs, presented an outline of comprehensive insurance and retirement programs which are being brought to all the pharmacists of the state under MPhA sponsorship.

On behalf of Pharmpac, the Pharmacists' Political Action Committee, Charles Spigelmire outlined its important work with legislators and the necessity for all in pharmacy to contribute.

Executive Director Gruz reported on the program of the Simon Solomon Economic Seminar.

There was then a special program on the Maryland Medical Assistance Program (Medicaid) on the subject of current directions in Medicaid program, Medicaid cutbacks and their impact on pharmacy and how community pharmacists fit into health maintenance organizations. Marvin Friedman, Chairman of the Rx Insurance Programs Committee, presided and the panelists were Harry Bass and Sue Fine of the Maryland State Department of Health.

calendar MP

March 18 (Thursday)—MPhA SWAIN PHARMACY SEMINAR

March 21 (Sunday)—University of Maryland Alumni Association Dinner Meeting—Martin's West

April 3-8—APhA Annual Convention, New Orleans

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Montgomery-Prince Georges County Pharmaceutical Association News

November 19, 1975

The executive Committee was called to order by President Elword Sandel at 7:45 P.M.

The following items of business were discussed:

1. The board was briefed on the proposed District of Columbia bill to require triplicate copies of all Class II scheduled items. The Board indicated its opposition to the bill.
2. Paul Reznek suggested that the organization appoint pharmacists to work with the Maryland Commission on Aging.
3. Nathan I. Gruz, MPhA executive director, explained that Medicaid prescriptions are to have a 50-cent deductible under proposed State regulations. He also noted that diabetes detection week-Dri-Paks are available to members at $5.00 apiece, and spoke briefly on the rescheduling of the annual trip as a result of Mexico's anti-Zionist UN vote, the Simon Solomon Economics Seminar and the Association's newsletter and membership activities.
4. Melvin J. Sollod and Henry Theis Jr. were designated to serve as pharmacy representatives to the Continuing Education Committee of the local chapter of the American Cancer Society.
5. Mr. Sollod concluded the meeting with a briefing on the various committees to be established for the year. The meeting was adjourned at 9 P.M.

A general membership meeting of the Association followed with a discussion of new pharmacy rules and regulations, pending legislation and the new pharmacy inspection report. The meeting was conducted by Messrs. Tregoe, Yaffee and Gruz.

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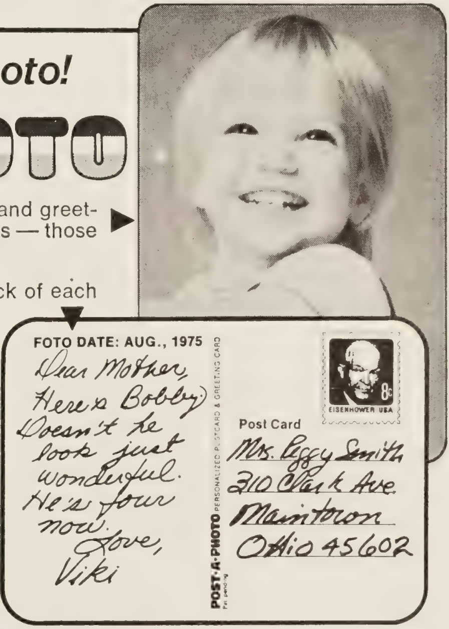

FOTO DATE: AUG., 1975

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General Assembly Delegate Timothy Hickman then made a presentation on his proposed legislation to require mandatory patient profiles. After considerable question and answer period and discussion, the luncheon portion of the program was adjourned.

The House of Delegates reconvened at 2:30 P.M. to consider the legislative report. The recommendations of the Legislative Committee were adopted as presented on motion of Mr. Friedman, duly seconded.

Mr. Freiman moved that MPhA adopt the use and maintenance of patient medication profiles as a standard of practice and to recommend that the Board of Pharmacy promulgate a regulation based on these standards of practice. Seconded and passed. A motion to reconsider failed. Mr. Parker moved to support the Board of Pharmacy proposal to increase the Board by two members—one a consumer—seconded by Mr. Friedman and passed.

3. *Only the pharmacist may select the appropriate drug product to be dispensed.* Pharmacist is responsible for choosing the proper drug, taking into account known facts of efficacy and price when, choice of brand or "generic" is his. He is responsible for choosing correct strength of correct product.

4. *Only the pharmacist may extemporaneously compound prescriptions for a particular prescription order.*

5. *Only the pharmacist may certify the finished product.* In certifying completed prescription medication, he must include (a) confirmation of original certification of prescription order, (b) checking of original labeled container from which medication was withdrawn, (c) checking of labels on prescription medication, (d) checking contents of prescription medication container and appearance of total product, (e) checking patients' previous medication records available for possible therapeutic incompatibility, and (f) insuring that information on each prescription is added to medication records which the pharmacy keeps. (NOTE—While patient medication profiles are certainly appropriate, we did not address ourselves at this point to making them mandatory; however, when kept, it must be the responsibility of the pharmacist to insure proper entries.)

6. *In issuing a prescription to a patient, pharmacist must reasonably assure that patient understands physician instructions and other information appropriate to proper utilization of the drug.* Pharmacist must make sure patient knows how and when to use medication, proper storage, and duration of therapy. The most positive contribution the pharmacist must make toward assuring optimal effectiveness of drug regime is encompassed in his counseling of patient. This may be done orally, in writing, by use of auxiliary labels, or combinations of these methods. If patient does not come in contact with pharmacist because of use of delivery service or pick up by other than patient, instructions should be offered in writing or by phone where appropriate."

Duly seconded and passed.

On motion of Mr. Friedman, duly seconded the following was approved:

"MPhA should request State Board to issue regulations allowing pharmacist to transmit copy of prescription to another pharmacist, using following as guidelines:

A copy of a prescription for a drug may be transmitted orally from pharmacist in pharmacy which has original valid prescription, to a pharmacist in another pharmacy who may dispense the prescription medication provided:

a. The original prescription shall indicate that a copy has been issued, to whom, and the prescription shall be marked with the word 'VOID'.

b. No further copy shall be issued nor medication dispensed pursuant to original prescription.

c. The prescription must have valid authorized refills or prescriber must be contacted."

The report also stated:

Committee discussed possible legislation for mandatory patient profiles and does not recommend supporting such at this time.

Committee will be working on long term project of Standards of Pharmaceutical Practice and welcomes suggestions for inclusion of subject matter and persons willing to work on the project.

The report of the Prescriptions Insurance Programs Committee submitted by Mr. Rubin was presented and discussed.

The Newsletter committee report by Mr. Rubin was also received.

The meeting was adjourned at 4:00 P.M.

Respectfully submitted:

NATHAN I. GRUZ, R.Ph.
Secretary

obituaries

MPHA MEMBERS

Benedict C. Malanowski, who operated the Patterson Park Pharmacy at Eastern and Patterson Park Avenues for nearly 25 years, died November 18 at the age of 65.

Mr. Malanowski retired and sold his business in 1960. He was graduated from City College in 1928 and attended the old Milton College of Pharmacy and Chemistry. He is survived by his wife, daughter and two grandchildren.

PRESIDENT'S MID-YEAR MESSAGE

One irrefutable fact that I have learned during the first half of the Association year is that one day is not completely free from Association involvement in some pharmacy situation, and that more often than not it is a confrontation problem. Patient profiles and the liabilities of use and non-use, many third-party complexities including the very recent proposed Medicaid "cost-containment" regulations, the Millis Study Commission Report and its effect on the future practice of pharmacy, price posting and advertising, and many other concerns, merely touch the surface of constant challenge.

The forces to which pharmacy has become open prey, because the profession is the most publicly accessible in communities throughout the State, are too numerous to list. Because the pharmacist practices in the light of public scrutiny, he is readily and thoughtlessly criticized by everyone who claims to have been dealt with unfairly. And because of complaints from often uninformed, self-appointed do-gooders find a willing and receptive ear in the legislative sector, the next step is not difficult to envision.

The watchful media, are of course always on the alert for something sensational to report or at least to note an item of consumer interest that will provide an immediate reader or listener response.

What then is the answer? The Maryland Pharmaceutical Association must continue to react to these actions in an appropriate and positive manner. In recognition of our determination to cope with many misguided critics, we must be prepared with active leadership and membership support.

Toward this end, I am satisfied at the moment with the work of our committee, and I am anticipating evidence of progress which will hopefully emerge as the second half of the year begins.

We have demonstrated the ability to perform when challenged in the past. The continuation of this ability has never been more sorely needed than right now.

Henry G. Seidman
President

SIMON SOLOMON

Continued from Page 6

Honored Alumnus Award of the Alumni Association of the University of Maryland School of Pharmacy in 1954. He served continuously as a member of the Executive Committee and Board of Trustees of the Maryland Pharmaceutical Association since 1939. He was a director of the Calvert Drug Company since 1944.

Simon Solomon's knowledge of the subject of "Fair Trade" was legendary and equalled by few in this country. He was consulted by national authorities and testified before committees of the Congress of the United States.

The 1962 *Terra Mariae* year book of the University of Maryland School of Pharmacy, has expressed well the feelings of Simon Solomon's colleagues:

> The strong and loyal devotion which Si has shown to his profession plus the fast that he makes himself readily available to others, has made him one of the most sought after men in the state on matters pertaining to pharmacy. His intelligent and practical solution to problems of pharmacy has earned him the title of a 'Sage of Pharmacy.'
>
> We take great pride in having in our midst such an outstanding leader as Simon Solomon, and we are very fortunate in having a gentleman of such high caliber. We appreciate all his efforts in that he has never refused to cooperate with the various pharmaceutical associations when called upon and his efforts are and will be appreciated by everyone connected with the profession of Pharmacy."

In 1964 Mr. Solomon was selected by the MPhA as the first recipient of the Bowl of Hygeia Award for Community Service. At his death he was serving as the first and only Honorary Life Member of the MPhA Board of Trustees. He had been recommended as Honorary President, APhA. He also had the distinction of being singled out as the only Honorary President of the Maryland Board of Pharmacy.

Simon Solomon's demise leaves a great void that will be difficult to fill in pharmacy. Let us hope that the example of his life as a man and as a pharmacist will inspire others to strive to emulate him as a worker and a leader among pharmacists.

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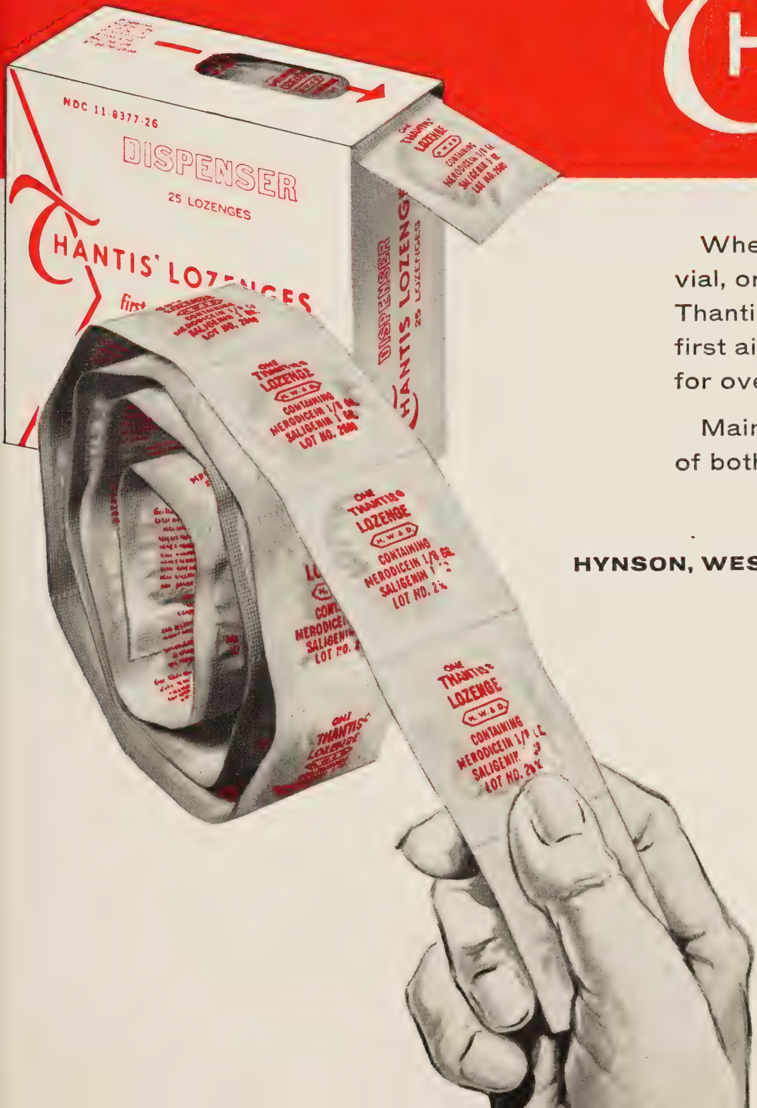
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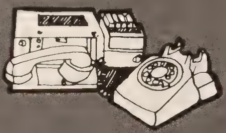

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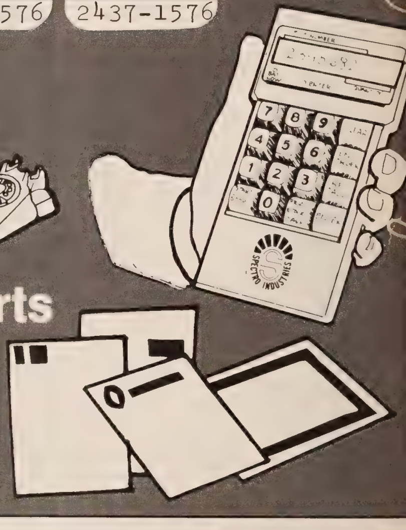

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THE
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Official Journal of
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DECEMBER 1975
VOL 51
NO 12

New Dimensions of Professional Concern

Medicaid Cutback Termed 'Penny Wise, Pound Foolish'

March 18 — SWAIN PHARMACY SEMINAR — Quality Inn, Towson

March 21 — Alumni Association Dinner Meeting — Martin's West

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DECEMBER 1975 VOL. 51 NO. 12

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NATHAN I. GRUZ, *Editor*
PETER P. LAMY, PHD.,
Institutional Pharmacy Editor
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editorial MP

NEW DIMENSIONS OF PROFESSIONAL CONCERN FOR 1976

Our major emphasis for some time has been on legislation and Third Party Programs. Great stress has been on the economic ramifications of these areas. The approach has been rooted to the outlook and perspectives of the past.

Today, however, new additional dimensions of professional concern confront pharmacists and the Association. We must turn more rapidly and emphatically — and I think we are so moving — in the direction of evaluating pharmacy practice and developing standards of pharmacy practice. We must try to achieve our professional and just economic goals through establishing standards of pharmacy practice. The results must be made obvious to legislators, government officials, health administrators, other health professions, the media and above all to the general public — the patients we serve. When our patients are convinced that a vital health service is in fact being provided then matters such as advertising and posting will be of little consequence.

A wholly new dimension of pharmacy practice today is "consumerism". Our beginnings with the Pharmacy Consumer Affairs Committee which we have established must be expanded.

In the area of legislation, we have arrived at the point where state legislators are calling upon the MPhA regularly to work jointly in developing legislation that meets the valid concerns of the profession as well as the paramount public interest. We are taking this new working relationship to the 1976 General Assembly session.

Organizationally, it is imperative that we enroll more members, especially in the area of salaried pharmacists in all sectors — community (both chain and independent), institutional, academic and governmental. Expanded membership is the key to achieving greater impact in both the governmental and health care areas and it must be the major source of funds for vitally needed expansion of staff.

In addition to more membership, we must somehow succeed in solving the mystery of how to motivate more members to attend; to participate; to contribute ideas, time and energy; and thus to qualify as leaders.

Finally, I want to emphasize the importance of the MPhA having a more active continuing education program that is addressed to the problems of pharmacy practice, legislation, third-party payment health programs and health planning. More pharmacists must be knowledgeable in the field of new systems of health care delivery.

These are some of the problems we have seen in the past year, and some of the challenges which lie ahead as we move to our country's Bi-centennial. I hope more of our members and potential members will respond in a constructive manner during 1976.

— *Nathan I. Gruz*

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MPhA CALLS STATE MEDICAID CUTBACK 'PENNY WISE AND POUND FOOLISH'

In a statement strongly critical of cutbacks ordered in the Maryland Medical Assistance Program (MEDICAID) which eliminates payment of non-prescription medication and supplies and establishes a fifty-cent co-pay fee per prescription to be paid by the patient, MPhA Executive Director Nathan I. Gruz called the action penny wise and pound foolish.

Mr. Gruz presented the Association's position in a statement made early in December at a hearing on the cutbacks. He said that although well-intentioned, the "cost containment" program would result in, "severe hardship to the indigent and medically indigent of the State."

"The real net savings," he said, "would be a few dollars because of shifting of expenditures from ambulatory community settings to costly institutional environments."

The full text of the statement follows:

"The Maryland Pharmaceutical Association presents the following statement on changes in current regulations proposed by the Maryland Department of Health and Mental Hygiene designed as 'cost containment' effective January 1, 1976, to meet anticipated deficits in the Maryland Medical Assistance Program during the balance of FY 1976.

"Comments and recommendations will be addressed to the following two proposed changes:

1. "Proposed elimination of payment of non-prescription medication and supplies ("OTC") except for insulin, needles, syringes and certain family planning supplies.
2. "Establishment of a fifty (50) cent co-pay fee per prescription to be paid by the patient.

I. "COMMENTS AND RECOMMENDATION ON THE OTC DRUG PROPOSAL

1. *"The division of medication into two classes — prescription and OTC — is arbitrary as far as the medical need of patients are concerned.* Some OTC drugs such as antacids are critical to the health or even life of patients with certain conditions. Some patients would have to spend $20 to $50 or even more to obtain essential OTC drugs now paid by Medicaid. This would be impossible for the indigent and medically indigent population served by Medicaid.
2. "Instead of enabling patients to live at home with their families, many who had been discharged from hospitals and placed on a regimen of drug therapy which often includes OTC drugs, would be forced back into hospitals, nursing homes and outpatient clinics involving large expenditure by Medicaid in order to obtain essential medication when their meager cash payments — so called "welfare money" ran out.
3. In addition, as welfare clients needing OTC drugs for prevention, treatment and health maintenance, used up their meager resources, they would be forced to return more frequently to their physicians for help. These patients would be forced to importune their physicians to prescribe the class of drugs that the state would pay for, namely, prescription drugs.

   Result: More expensive medication, more potent medication, more pharmacists' fees, and more physicians' fees.

   Net result: not savings, but greater expenditure for drugs, for pharmacy services and for physicians' services.
4. "This OTC elimination is, therefore, discriminatory in that OTC drugs would continue to be paid by Medicaid in the hospital (for inpatients), in nursing homes and in HMOs (Health Maintenance Centers) under contract with the state of Maryland.

RECOMMENDATION:

"Just as OTC drugs will be paid in accordance with a formulary (with maximum allowable costs) now being established by the State Medicaid Program for patients in nursing homes, so should an "OTC Formulary" be established immediately for use in community and hospital outpatient pharmacies service ambulatory patients.

II. "COMMENTS AND RECOMMENDATIONS ON PRESCRIPTION CO-PAY

1. **"The proposal for co-pay for pharmacy services will place a special burden on those very patients whose health is the most precarious and require a great deal of medication in the judgment of their physicians.** Many patients, especially the elderly with serious medical complications and chronic diseases commonly require five, ten or more prescriptions per month. A fifty cent co-pay will mean $5.00, $10.00 or more a month and this on top of cash outlays for badly needed OTC drugs.
2. **"The result will often be not getting certain prescriptions required for health or even life.** The results can be disruption of therapeutic regimen, hospitalization, admission to nursing homes and resort to hospital clinics. Again, **readmission to institutions will mean the expenditure by Medicaid in one day of more than can be saved in months of "saving" through co-pay.**
3. "Co-Payments for Ambulatory Care: Penny-Wise and Pound-Foolish"

   "This is the title of an article in the highly regarded journal, *Medical Care,* June 1975, Vol. XIII, No. 6, pg. 457-466. Here is the abstract quoted verbatim from the article:

Continued on Page 19

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MPhA Continuing Education Seminar

Annual Economics Seminar Opens With a Tribute to Simon Solomon

The MPhA's annual Pharmacy Economics Seminar held November 25 at the Friendship International Inn began with a tribute to the man for whom the seminar was named, Simon Solomon. Mr. Solomon died the previous Friday at the age of 79.

Executive Director Nathan I. Gruz conducted the brief memorial service and read a tribute to Mr. Solomon, who was known throughout the profession as "The Sage of Pharmacy."

Following greetings by Henry G. Seidman, president of the MPhA and an outline of the seminar's objectives by Mr. Gruz, the sessions began with a presentation by Dr. Francis B. Palumbo, assistant professor of pharmacy administration at the University of Maryland School of Pharmacy, entitled, "Overview of Management Challenges for Pharmacy in the 70s."

Dr. Palumbo's talk was followed by a workshop on "Trends in Community Pharmacy Operations—The Lilly Digest and the Chain Store NACDS-Lilly Digest." George F. Slavin Jr., manager of trade relations for the Eli Lilly Company, conducted the session. Workshop leaders included Dr. Palumbo and Dr. David A. Knapp, professor and chairman of pharmacy administration at the University of Maryland School of Pharmacy.

The luncheon speaker was Dr. Jean Gagnon, associate professor of pharmacy administration at the University of North Carolina School of Pharmacy. Dr. Gagnon spoke on the subject, "Consumer Perceptions of Pharmacy."

The afternoon session featured a presentation and workshop on, "Developing an Equitable Fee for Patient and Pharmacist." It was conducted by Dr. D. C. Huffman Jr., Professor of Pharmacy Administration at the Univeristy of Tennessee College of Pharmacy and Executive Director of the American College of Apothecaries. A discussion and summation by Dr. Palumbo and the seminar faculty concluded the day-long program.

In the evening a dinner meeting of members of the American College of Apothecaries in the Maryland-Virginia region was held to discuss the formation of a ACA Chapter in the area. Joseph Dorsch presided and speakers included Dr. D. C. Huffman, ACA executive director, and Nathan I. Gruz, MPhA executive director.

(Paramount Photo Service)

Participants in the annual Simon Solomon Continuing Education Seminar are, left to right, Dr. Jean Gagnon, Associate Professor of Pharmacy at the University of North Carolina School of Pharmacy; Henry G. Seidman, MPhA President; George F. Slavin, Jr., Manager of Trade Relations, the Eli Lilly Co.; Dr. Francis B. Palumbo, Assistant Professor of Pharmacy Administration at the University of Maryland School of Pharmacy; Dr. D. C. Huffman, Jr., Professor of Pharmacy Administration at the University of Tennessee College of Pharmacy and Nathan I. Gruz, MPhA Executive Director.

calendar

March 18 (Thursday) — MPhA SWAIN PHARMACY SEMINAR — Pharmacy Update 1976 — Quality Inn — Towson.

March 21 (Sunday) — U of M Alumni Association Dinner Meeting — Martins West — 7:00 p.m..

April 3-8 — APhA Annual Convention, New Orleans.

June 18-20 — MSHP Annual Seminar, Sheraton Fontainebleau, Ocean City.

June 20-23 — MPhA ANNUAL CONVENTION, Sheraton Fontainebleau, Ocean City.

September 19-23 — NARD Convention, San Francisco.

November 4 (Thursday) — MPhA SIMON SOLOMON PHARMACY ECONOMICS SEMINAR.

INTRAVENOUS FILTERS

by
E. Wilson Nollau, M.Sc.* and
Peter P. Lamy, Ph.D., F.C.P.†

The Problem of Particulate Matter

Starting in the late 1940's disturbing reports were being published on the effects of particulate matter when introduced into the vascular system. Until, then, the injection of a small amount of ordinary dust, lint, carbon, rubber fragments or glass particles was not considered to be particularly harmful to patients (1). It was assumed that such matter became entrapped in the pulmonary capillary bed and that, being relatively inert, its presence was not meaningful. Besides, no profound response to such contamination had been reported. Then in 1948, Prinzmetal, *et al.* (2) published the results of research on animals demonstrating that glass beads up to 390 micrometers in diameter may pass the pulmonary capillary bed and reach the systemic circulation. In this experiment, these beads were recovered for the most part from the liver, indicating that the lung need not be the final resting place of intravascular particles administered in intravenous solutions.

In 1949, Von Glahn and Hall (3) noted six human cases of cotton fiber-induced vascular granulomata of the pulmonary artery. In 1955, Bruning (4) observed vascular granulomata due to cellulose fibers in 19 of 210 autopsies on children. Garvan and Gunner (5, 6) reported innovative procedures of particle isolation and identification to yield conclusive evidence that injection of particles into a closed system such as the human vascular system is indeed potentially hazardous. Also, it was found that the greater the volume of solutions administered to a patient, the greater is the hazard. In this regard, it is important to note that the average hospital patient received 2.5 liters of parenteral solutions (7), while the critically ill patient may receive 60 to 100 liters (8). Jonas (9) gave a rather grim picture of this potential danger:

> "The size and shape of the particle must be thought of in three-dimensional terms. The particles may be irregular with many rough edges, or long and thin such as filter fiber or fragment of glass. The chemical composition of the particle may be critical. It may be biologically inert or incite an inflammatory reaction or, even worse, a neoplastic response by the host. The particle could be antigenic; i.e., sensitize the patient, providing the background for an allergic reaction of some future date."

Lockhard (10) found that particulate matter injected intravenously may produce pulmonary microemboli, thrombi, or granulomas and that animal experimentation has demonstrated reflex vasoconstriction in the lungs after injection of particulate matter.

Yet, it is unlikely that intravenous fluids will ever be absolutely free of particulate matter. Particulate contamination is, and will continue to be, a serious problem.

To illustrate the magnitude of this problem, a manufacturer has categorized a variety of possible sources of particulate contamination (11):

1. the solution and its components
2. the package and its components
3. the process of manufacture and its variables
4. the sets and devices used in the administration of these preparations
5. the manipulations involving the hospital itself and the patient.

The Evolution of Intravenous Final Filters

The question of how to protect the patient, perhaps critically ill and who may receive from 60 to 100 liters of fluid parenterally, still remains. The answer, obviously, is to filter the solution as it is being administered to the patient. As the intravenous set itself has been implicated as one of the possible sources of contamination, it would seem essential that a final filter be located as close to the injection site as practical. Indeed, it has been suggested that if it were possible, the optimal location for such a filter would be in the hypodermic needle or catheter where it enters the patient's vein. Theoretically, then, the filter should be located as far downstream as possible. Yet, there are certain drawbacks to this theory.

A variety of intravenous filters is now available. These filters are thought to function in one or, more usually, a combination of the following ways:

1. sieving or screening
2. entrapment in tortuous passageways
3. electrostatic attraction.

The Surface Filter

When a filter retains particles by sieving, the particles are retained on the surface of the filter. One filter that functions almost exclusively by the mechanism of seiving, is the cellulose membrane type filter.[a] Such filters are thin, porous structures composed of pure and biologically inert cellulose esters or similar polymeric materials. The pores in these filters are extremely uniform. For example, the total range of pore size distribution in a 0.45μ filter is 0.45μ plus or minus 0.12μ. Each square centimeter of filter surface contains millions of capillary pores which occupy approximately 80 percent of the total filter volume (12). These pores, rather than being straight columns, are curved and wavey. The functional purpose of such curves is to trap any particles having the same diameter as the pore. If manufacturer's claims are to be believed, the flow rate through membrane filters is at least 40 times faster than through "conventional" filters approaching the same particle size retention capability (13). The manufacturer, however, has failed to define what is meant by "conventional filters.

---

*Mr. Nollau is Director of Pharmacy Services, York Hospital, York, Pennsylvania.

Dr. Lamy is Professor of Pharmacy and Director, Institutional Pharmacy Programs, University of Maryland Hospital/School of Pharmacy, Baltimore, Maryland.

†Abstracted for a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science.

An additional patient benefit accrues when bacterial filters are used. Not only are they capable of removing non-viable particulate matter, but they will also remove viable organisms which may be presented as contaminants. Fig. 1 is a scale depicting the various microbes and micro-particle sizes. It shows that a 0.22μ membrane filter is a bacterial filter. Any porosity above 0.22μ will filter particulate matter, but not all bacteria. Equally important, it is true that membrane intravenous filters cannot be used as blood filters since leucocytes are approximately 12.0 to 14.0μ in diameter and could not pass through. Hence, membrane filters are readily clogged by blood and certain viscous intravenous solutions such as dextrans.

If a decision were made in a particular hospital to use an in-line filter, in selecting one that would have a dual purpose of eliminating both particulate and viable contaminants, it must be considered that additional equipment will be needed. This, of course, might further complicate nursing procedures and thereby increase resistance to the proposed change. In order that the average solution flows freely when a bacterial filter is used, some sort of pressure is generally required to assure normal and continuous flow through the filter; hence, either negative pressure downstream or positive pressure upstream of the filter is necessary. Mechanical devices are available to assure continuous as well as regulated flow.[b] Many hospitals have some of these devices, but it would be quite costly to have sufficient infusion pumps for all intravenous solutions administered at any one time in a hospital.

The membrane filter itself is a thin brittle membrane 125 to 150μ thick. Because of its brittleness, the membrane is supported downstream by a porous grid to prevent its rupturing. The present in-line final filters with membrane filters have a plastic housing and grid. While the one-layer membrane filters are available in 20 different pore sizes, from 0.025μ to 14.0μ, for the purpose of filtering intravenous solutions, there are four functional porosites of these membrane filters ranging from 0.22μ or bacterial filter size, to 1.0μ in diameter. Available filters are listed in Table I.

TABLE I

COMMERCIALLY AVAILABLE FILTER SETS

Manufacturer	Filter Trade Name	Porosity Size (μ)
Cutter Laboratories Berkeley, Calif.	Saftiset I.V. Filter	1.0
Abbot Laboratories Chicago, Ill.	S-A-I-F Set	1.0
Travenol Laboratories Deerfield, Ill.	Final Filter	0.5
Abbott Laboratories Chicago, Ill.	S-A-I-F Set	0.45
McGaw Laboratories Milledgeville, Ga.	In-Line Membrane Filter	0.45
Extracorporeal Med. Spec. King of Prussia, Pa.	Microporous Final I.V. Filter	0.45
Extracorporeal Med. Spec. King of Prussia, Pa.	Microporous Final I.V. Filter	0.22

A major disadvantage of these filters is that membrane filters are easily clogged by liquid-borne particles which approximate the pore size (Fig. 1). The smaller the pore diameter of the filter, the more easily it can become clogged. Disadvantageous, too, is the fact that the viscosity of the solution can affect the flow rate greatly. In the base of certain intravenous solutions, such as the dextrans, it is almost impossible to use an in-line filter other than the blood filter set which has a porosity of approximately 100μ.

Another problem area, especially in the use of the membrane filter, is the air block. An air block occurs when a bubble of air is accidently introduced into the filter assembly between the solution and a membrane filter that has been wetted. Such an air block can stop the flow of an intravenous solution completely.

Still another type of depth filter is one that is constructed of fiber material which is used frequently in manufacturing. Paradoxically, fiber filters which are designed to remove particulate matter may shower the solution with particles of their own materials, and the filtrate may contain more particles than the unfiltered solution. As recently as 1972, Nicholson (14) reported asbestos fiber contamination of parenteral drugs. These particles were found in approximately one-third of the samples from two sets of 17 widely-used drugs, despite the known toxicity and carcinogenic potential of the asbestos filter type contaminant. It is ironic that the beer industry is much more advanced in filtration technology. For clarity and a polished product, breweries have used membrane filters for years, and their product need not be given intravenously to obtain results. However, the reports on this source of particulate contamination have not been entirely wasted on the parenteral solutions manufacturers. Turco (15), in an address to an I.V. Therapy seminar, reported that many parenteral solutions manufacturers have converted to filters other than fiber filters and the amounts of this particular type contamination has dropped considerably in the past few years.

In defense of the parenteral drug manufacturers it must be said that chyrsotile asbestos, the type used to filter parenterals in the manufacturing process, is considered a good filter that allows rapid filtration in an industry where the speed of filtration is often critical to the potency and/or the degradation of the product. Investigators of this problem of contaminants would argue strongly that a last or final filter such as a membrane filter or a filter of other non-

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Indications: Acute, recurrent or chronic nonobstructed urinary tract infections (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms. ***Note:* Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides, especially in chronic or recurrent urinary tract infections.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.

Contraindications: Sulfonamide hypersensitivity; pregnancy at term and during nursing period; infants less than two months of age.

Warnings: Safety during pregnancy has not been established. Sulfonamides should not be used for group A beta-hemolytic streptococcal infections and will not eradicate or prevent sequelae (rheumatic fever, glomerulonephritis) of such infections. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy. Insufficient data on children under six with chronic renal disease.

Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.

Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *gastrointestinal reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L.E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia as well as thyroid malignancies in rats following long-term administration. Cross-sensitivity with these agents may exist.

Dosage: Systemic sulfonamides are contraindicated in infants under 2 months of age (except adjunctively with pyrimethamine in congenital toxoplasmosis).

Usual adult dosage: 2 Gm (4 tabs or teasp.) initially, then 1 Gm *b.i.d.* or *t.i.d.* depending on severity of infection.

Usual child's dosage: 0.5 Gm (1 tab or teasp.)/20 lbs of body weight initially, then 0.25 Gm/20 lbs *b.i.d.* Maximum dose should not exceed 75 mg/kg/24 hrs.

Supplied: Tablets, 0.5 Gm sulfamethoxazole; Suspension, 0.5 Gm sulfamethoxazole/teaspoonful.

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shedding material be included in the drug production process.

Another surface in-line filter, about which little is known, is a surgical steel mesh filter[c] having a pore size of about 150μ. This approximates the size of blood filters. It is not being actively promoted, perhaps because it is a much coarser filter than is universally recommended for intravenous solution filtration.

The Depth Filter

An alternative to the sieve or surface filter is the depth filter, a multilayered filter which operates principally by entrapment. Until recently, use of the depth filter was not considered seriously by filter manufacturers for in-line filtration of solutions. The depth filter was envisioned as a prefilter, whereas the screen filter was the absolute or ultimate filter. The depth filter acts as suggested by the process of random absorption and entrapment, so that there is some rationale for the conclusions of some that this type filter would be capable of maintaining a faster flow rate. Undoubtedly, a prime factor in bringing about a change in attitude towards the depth filter is the cost of the in-line membrane filter, which is approximately four to five times the cost of the membrane filter.

One such depth filter is the Sherwood filter connector.[d] The filter is made of irregularly shaped spheroids of stainless steel bonded at tangential points by sintering to form a cup-shaped, microporous, sponge-like filter. This type filter has a large particle retention capacity plus the ability to retain a large percentage of particles below its rated size by trapping them in its sponge-like body. While it is rated as having a pore size of 5.0μ, independent testing shows it to have efficiencies of better than 99 percent for particles greater than 1.3μ(16). The depth filter connector, like the membrane final filter, is designed for in-line control of particles while infusing intravenous solutions. It connects the needle adaptor to the intravenous administration set with the intravenous placement device (e.g., needle, catheter, cannula, winged infusion set, etc.) by means of female-male Luer connections. Because the filter has a porosity of less than 100μ, liquids not in true solution such as blood, blood products, emulsions or suspensions, or any medicament not totally soluble should not be infused through this filter.

There is available a filter aspiration needle.[e] This needle is not used as a hypodermic filter needle for final filtration, but is intended for and specifically designed to remove particulate matter from intravenous additive medications. The needle is a polycarbonate plastic with an integral stainless steel depth filter sealed in the hub. It is used as a pre-filter to draw up a reconstituted drug or other liquid additive into a syringe from glass ampuls, rubber stoppered vials or other containers. In that these admixtures are a prime source of particulate contamination, use of the filter aspiration needle prevents the transfer of this contamination into the intravenous solution. After the additive solution has been drawn into the syringe and thus filtered, the aspiration needle is discarded and a hypodermic needle is used to transfer the filtered solution to an intravenous solution. In using this technique of prefiltration, precautions must be used to prevent possible contamination from improper aseptic technique.

Combination Filters

There is also another type filter combining both membrane filtration and depth filtration.[f] It consists of a microporous membrane to screen out particulate matter, and two layers of membrane, forming the tortuous pathways of depth filters. The pores do not follow a fixed pattern, thus creating a random path for the solution to follow. Turco and Davis (17) refer to the random path membrane (R.P.M.®) filter as a depth filter rather than a surface filter. This categorization is probably more accurate in that like all depth filters, it acts by the process of random absorption and entrapment. The filter is said to be 97 percent to 98 percent effective in removing particles 5.0μ and above (17). The rationale in using 5.0μ porosity filter is that the flow rate should not be inhibited as much as with a filter of lesser porosity and that particles larger than 5.0μ may cause occlusion in the capillaries. The flow-rate of the R.P.M.® filter is said to be comparable to the flow-rate of membrane filters of 0.45 to 1.0μ porosity. Similar to the Argyle® depth filter, it is a filter-connector being placed distal to the intravenous administration set and the intravenous placement device.

A more recent and slightly different type of an in-line filter is one that incorporates an ultra-fine polyester fiber mesh filter with a back-up of a membrane filter.[g] As with the R.P.M.® filter, the Filter-Flo® filter is a depth filter which incorporates the sieving action of the membrane filter, having a 5.0μ porosity. In short, the Filter-Flo® Adapter is a filter connector much like the Argyle® or the R.P.M.®.

In addition to the Filter-Flo® Adapter, there is available the Filter-Flo® Extension, consisting of the basic filter adapter with a nine inch extension set attached. At the distal end of the extension tubing is the traditional flash ball located just above the male connector which attaches to the hypodermic needle or catheter. The advantage of having a flash ball or medicinal entry site at this location on the administration set, plus a convenient pinch clamp, is at once obvious to anyone familiar with the complexities of present day intravenous therapy.

Continued on Page 22

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Executives participating in Gilpin-Kiefer-Stewart merger are, left to right, David Moxley, Chairman of the Board of Kiefer-Stewart Co.; James E. Allen, Sr., president and Chairman of the Board of the Henry B. Gilpin Co., and Mr. L. Scott Moxley.

GILPIN, KIEFER-STEWART COMPANIES ANNOUNCE CORPORATE MERGER

The executive officers of the Henry B. Gilpin Co. of Washington, D.C. and the Kiefer-Stewart Co. of Indianapolis, Ind., two of the country's oldest drug distribution firms, have announced a corporate merger.

James E. Allen Sr., president and chairman of the Gilpin Co., in announcing the merger said: "We welcome our new associates with respect. We have developed a new program, custom-tailored to achieve more together in terms of economical time and place distribution services for suppliers, and increased dynamism in our delivery of customer services in all of our markets. Our program is supported by increased economies of scale."

Mr. Allen and David Moxley, chairman of Kiefer-Stewart expressed enthusiasm for the merger, and indicated that it will provide, "many new and meaningful benefits to the customers and personnel of both organizations."

Gilpin, with headquarters in Washington, D.C., was founded in 1845. The company operates full service, heavy-duty drug distribution centers in Baltimore, Dover, Del.; Memphis, Tenn.; Norfolk, Va., and Indianapolis. Gilpin also operates diversified marketing enterprises in drugstore franchising, including Sentry Drug Centers Inc., Point of Purchase Service Merchandisers Inc. and McKenna Surgical Supply Inc.

Kiefer-Stewart, founded in 1840, has been a major influence upon the growth of the drug industry in the United States. It has made major contributions to advanced methods for economical drug distribution, including some of the first retail support programs for strengthening community pharmacies.

SPEARBECK RECEIVES AWARD

Edward Spearbeck, director of professional services for Drug Fair Inc., Alexandria, Va., recently received the 1975 National Association of Chain Drug Stores (NACDS) - Upjohn Award given in recognition of contributions to pharmacy and the chain drug industry. Part of his award included a $2,500 check and he, in turn, contributed $1,000 of that amount to the University of Maryland School of Pharmacy to be used for tuition assistance for fourth and fifth year students.

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Continued from Page 8

"The California "copayment experiment" imposed a charge of $1 on certain Medicaid beneficiaries for the first two visits to a doctor and 50 cents for the first two drug prescriptions each month, effective January 1, 1972. Data on utilization rates were gathered for six months before this date and for 12 months after it. While other administrative requirements, like prior authorization of certain services, doubtless also played a part, it was found that, **following the state of copayment, utilization of ambulatory doctor's office visits and other services associated with them showed a decline, relative to that of the non-copayment cohort. After a brief lag, however, hospitalization rates in the copay cohort rose to levels higher than those of the non-copayment cohort — more than offsetting the savings to the state from the reduction of ambulatory service use rates.** Due presumably to the neglect of early medical care because of the **inhibiting effect of the copayments, these higher use rates of costly hospitalizations suggest that financial deterrents on access to ambulatory service by poor people** are **penny-wise** and **pound-foolish, not to mention their effects on health and well-bring.**

RECOMMENDATIONS:

"No establishment of co-pay.

III. "CONCLUSIONS AND GENERAL RECOMMENDATIONS TO ACHIEVE "COST CONTAINMENT" WITHOUT INJURY TO THE PATIENTS ON MEDICAID

1. "Immediate establishment of an OTC drug formulary.
2. "Immediate expansion of the Medicaid Formulary to permit the pharmacist to dispense low cost quality medications in place of expensive brand name drugs.

   "The Federal Food and Drug Administration has recently stated that there are only about 25 drug entities in which there are scientifically documented equivalence problems. As far as the thousands of other drug entities are concerned, pharmacists are already day-in and day-out selecting the brand or manufacturer of a drug product after the prescribing physician has indicated his choice of drug entity by writing the established or "generic" name. Drug product selection for all patients (Medicaid and non-Medicaid) has been practiced effectively by pharmacists for many decades.
3. "The suggested expanded formulary system can be coupled with the institution of "Maximum Allowable Cost" guidelines as proposed by the Maryland Pharmaceutical Association earlier in the year.
4. **"The largest part of the "Pharmacy Services" budget is for the cost of drug ingredients — a cost over which the pharmacist has little control.** The ingredient cost is primarily set by the pharmaceutical manufacturers, who have been raising their prices on brand drugs substantially, except (recently) where their patents have run out and competitors have put out "duplications" either under new brand names or under generic names.

Continued on Next Page

maryland board of pharmacy

The following are the pharmacy changes for the month of December:

New Pharmacies

Thrifty Wise #319, Arthur K. Solomon, President; RFD4, Box 40, Berlin, Maryland 21811.

Maryland Rehabilitation Center Pharmacy, Mark L. Stancil, Director; 2301 Argonne Drive, Baltimore, Maryland 21218.

Read's Inc. #41, Arthur K. Solomon, President; 5710 Wabash Avenue, Baltimore, Maryland 21215.

Hereford Pharmacy, Inc., Mahlon Peters, President; Box 96D, Route 1, Parkton, Maryland 21120.

K Mart Pharmacy #3277, E. E. Wardlow, President; 8036 Jumpers Mall, Pasadena, Maryland 21122.

Welsh Pharmacy, C. Robert Welsh, President; Berlin Shopping Center, Berlin, Maryland 21811.

Pratt Professional Pharmacy, R. L. Smith and A. K. Smolen; 1916 West Pratt Street, Baltimore, Maryland 21223.

Changes of Ownership, Address, Etc.

Manchester Pharmacy, Inc., Henry J. Glaeser, Jr., President; 10 Westminster Street, Manchester, Maryland 21102; (change from individual ownership to corporation).

No Longer Operating as Pharmacies

Rex Pharmacy, Leon Rosen, President; 4637 York Road, Baltimore, Maryland 21212.

Weiner's Pharmacy, Phillip P. Weiner; 5501 Reisterstown Road, Baltimore, Maryland 21215.

Slama Scholarship Established

Mrs. Lillian Slama recently presented a check to Dean William J. Kinnard Jr. of the University of Maryland School of Pharmacy to establish the Dr. and Mrs. Frank Slama Scholarship Award in the pharmacognosy department. The award has been designated for undergraduates studying in the field of biopharmacognosy. Dr. Slama was a former distinguished profressor at the pharmacy school.

"More than one million dollars (about 10% of the drug cost) could be saved by an expanded formulary, MAC and a vigorous informational and promotional program addressed to prescribers (physicians, dentists, etc.) and to pharmacists by the Medicaid Program.

5. "If institution of **co-pay** is adopted in the final conclusion by the Department of Health and Mental Hygiene, **it should not be instituted solely for pharmacy services, but across the board for ALL services:** physicians, dentists, optometrists and so on. The state should not single out the pharmacist as the only "bad guy" who asks the indigent for a fee, while all the other providers of health care would be perceived as magnanimous philanthropists.

   "It should be emphasized that the collection of co-pay is a burden on the provider. Where the patient has no money he must be either refused medication or the pharmacist suffers a drastic reduction in his fee. The adoption of any co-pay requirement must incorporate a prohibition against the exploitation by promotional devices or advertisements of full or partial waiver of co-pay. Such waivers tend to negate the one positive feature of co-pay, namely, discouraging patients from obtaining medication not medically required at the time.

6. "**SPECIAL PROFESSIONAL SERVICE FIELD REPRESENTATIVE. The employment by Medicaid of even one full time person to call upon the top 100 prescribers, i.e., the 100 physicians who see the most patients and are writing the most prescriptions could help significantly.** Prescribers must be informed of the great savings to taxpayers that can result from prescribing by generic name or permitting the pharmacist to select the particular manufacturer or brand that is more economical without sacrificing therapeutic effectiveness. This is one of the important functions that the pharmacist is particularly educated for in his five to six years course of study at the University of Maryland School of Pharmacy and elsewhere. A small expenditure for qualified field personnel, we believe would bring substantial savings in the drug cost component of the pharmacy services budget.

7. **DRUG UTILIZATION REVIEW.** Review of the record of providers in the prescribing and dispensing of medication is essential to assure rational prescribing, cost effectiveness of medication dispensed and compliance with professional standards of pharmaceutical practice. At the same time attention must be given to the waste of funds resulting from unregulated promiscuous utilization by patients of several physicians. This results in unnecessary physician fees, duplication of prescriptions from many prescribers and diversion of drugs of abuse interest into illicit traffic. A substantial number of Medicaid prescriptions for controlled dangerous substances are not medically valid or are forgeries.

   "Although the electronic data processing technology for drug utilization review (D.U.R.) has been available for five years or more, we understand it will not be available in the Maryland program for perhaps another year. In the meantime, we are convinced a small investment in a vigorous manual D.U.R. program will pay for itself many times over in savings.

8. "The Maryland Pharmaceutical Association has offered its services to the Maryland Medical Assistance Program in the area of Peer Review. Its Peer Review Committee is ready to assist the program in helping to assure high standards of pharmacy practice at the greatest economy for the benefit of patients, the program and taxpayers."

PRODUCT PROBLEM REPORTING PROGRAM EXPANDED

Problems related to medical devices, diagnostics, drugs or equipment can now be reported through expansion of the national Laboratory and Medical Product Problems Reporting Program.

The Medical and Laboratory Product Problems Reporting Programs are modeled after the successful Drug Product Defect Reporting Program initiated in 1971 which has thus far generated 17,000 reports from pharmacists. Both programs are coordinated by the USP under contract with the Food and Drug Administration.

Mailouts of report forms are made periodically to members of participating associations and reports received through the systems are reviewed immediately by USP Staff and forwarded daily to the FDA and the manufacturer. Health hazards as well as significant suggestions for product improvement have been identified by these systems.

Expansion of the Medical Product Problem Reporting Program to these areas of the health care field will be completed during the coming year. Cooperation received from the participating organizations has been enthusiastic. The American Society of Hospital Pharmacists has asked hospital pharmacists to explain the Laboratory Product Problem Reporting Program to appropriate hospital personnel and to encourage their participation.

Further information concerning these programs can be obtained by writing to the United States Pharmacopeia, 12601 Twinbrook Parkway, Rockville, MD 20852.

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Panelists at the November meeting of the Montgomery-Prince George's County Pharmaceutical Association, left to right, are Nathan I. Gruz, MPhA Executive Director; Charles Tregoe, secretary of the Maryland Board of Pharmacy, and Morris R. Yaffe, President, Maryland Board of Pharmacy.

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Ronald Lubman, left, was installed as President of the Baltimore Pharmaceutical Association in November by past-President, Paul Freiman.

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Continued from Page 16

An administration set which incorporates a filter unit similar to the blood filter is now available.[h] This basic administration set contains a nylon mesh filter in the drip chamber of the set. The mesh has a 100μ porosity and is designed to act basically as a pre-filter to remove large or gross particulate matter. An innovation, undoubtedly an off-shoot of this particular filter administration set, soon to be marketed[i] is a set which will incorporate the 100μ nylon mesh filter in the drip chamber with a 10μ "final filter" at the distal end of the set.

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[a] Millipore Filter, Millipore Corp., Bedford, Mass.
Membrane Filter, Gilman Instrument Co., Ann Arbor, Mich.

[b] I-Vac Infusion Pump, I-Vac Corp., Union, N.J.
Extracorporeal Infusion Pump, Extracorporeal Med. Spec., King of Prussia, Pa.

[c] Saftisystem I.V. Set #860-54, Cutter Laboratories, Berkeley, Calif.

[d] Argyle® Filter Connector, Sherwood Medical Industries, St. Louis, Mo.

[e] Argyle Filter Aspiration Needle, Sherwood Medical Industries, St. Louis, Mo.

[f] McGaw R.P.M.® Filter, McGaw Laboratories, Milledgeville, Ga.

[g] Filter-Flo® I.V. Filter, Burron Medical Products, Bethlehem, Pa.

[h] Intravenous Filter Set, Burron Medical Products, Bethlehem, Pa.

[i] Burron Medical Products, Bethlehem, Pa.

YOUTH CHARGED IN PHARMACY ROBBERY

A 19-year-old Baltimore youth has been arrested and charged with robbery and abduction after allegedly holding up McClean's Pharmacy in the 6700 block of McClean Boulevard, in northeast Baltimore in early December.

Jay R. Newrith, 26, the pharmacist was forced at gunpoint to turn over four bottles of barbituates to the youth and a companion, who later attempted to abduct a motorist. The youth was later apprehended and charged with assault and robbery, abduction, assault and narcotics violations. He was held without bail to await trial. The other suspect was being sought by police.

PHARMACISTS GIVEN COURSES IN FIREARMS

In conjunction with a program called Pharmacists against Crime, the Jefferson Parish (La.) Sheriff's Department is offering a nine-hour firearms instruction course to teach druggists in New Orleans how to thwart armed robberies.

So far nearly 60 pharmacists have been trained when to use a firearm, when not to use one and how to hit a target. According to Nolan Baininеaux, head of the Pharmacists Against Crime Program, half of the 750 pharmacists in the New Orleans area have armed themselves against holdups.

Sixteen of nineteen druggists taking the course qualified with their weapons, scoring better than 105 of a possible 150 points.

PAUL PUMPIAN NAMED VICE-PRESIDENT AT KETCHUM

Pharmacist-attorney Paul A. Pumpian has been appointed Vice-President of Ketchum Marketing Services, Inc., a subsidiary of Ketchum & Co.

Mr. Pumpian, a former Baltimorean, had most recently been Secretary of the New Jersey Board of Pharmacy, and in a career spanning more than 25 years has been an educator, government official, legal counsel and pharmaceutical executive.

Prior to joining the New Jersey Board of Pharmacy in 1971, Mr. Pumpian had been Secretary of the Wisconsin State Board of Pharmacy from 1959 to 1966. He was with the Food and Drug Administration from 1966 to 1969 as Director of Legislative and Governmental Services and, prior to that, as Assistant to the Director, Bureau of Drug Abuse Control.

DOERR TO RECEIVE 1975 REMINGTON MEDAL

Pharmacist Albert Doerr of Bismark, North Dakota, has been named recipient of the 1975 Remington Honor Medal according to Arthur G. Zupko, Secretary, Remington Honor Medal Committee.

Mr. Doerr becomes the 49th Remington Medallist chosen since the award was conceived in 1918 by the late Hugo H. Schaefer in memory of Joseph P. Remington. The judging committee consists of APhA Past Presidents, and the award is made on the basis of individual service to American pharmacy.

Presentation of the Medal will be made at a Remington Medal Dinner in New Orleans, during the 1976 APhA Annual Meeting.

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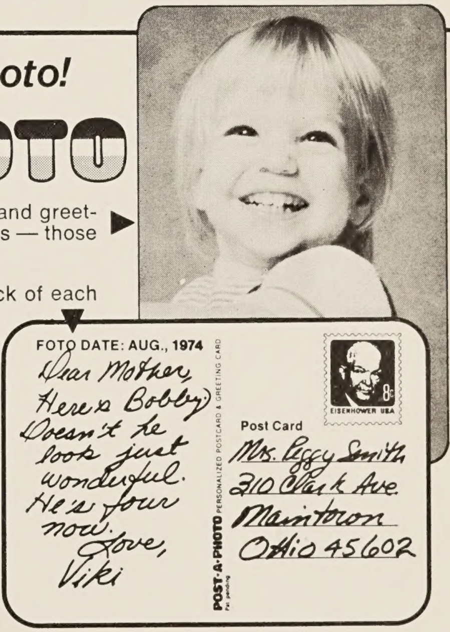

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